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THE DIAGNOSIS OF LOBAR PNEUMONIA*

BY REGINALD FITZ, M.D.†

INTRODUCTION

PNEUMONIA is a topic which is of perennial interest to the medical profession. In this paper I have attempted to discuss the early diagnosis of this illness from the viewpoint of a general practitioner—a man seeing each day a variety of clinical problems, forced to make a diagnosis quickly, accustomed to take a history including only salient features, carrying in his bag a thermometer, a stethoscope, a blood pressure machine, a bottle in which to collect a urine sample, and a white counting pipette with which to make a white blood count when occasion demands. In order to limit my subject, I have elected to take up solely the problem of lobar pneumonia. The bulk of my material consists of eighty-eight cases from the Peter Bent Brigham Hospital which have been studied clinically, the anatomical diagnosis being made in each instance by the pathologists. I have endeavored to reconstruct from these cases the clinical picture of lobar pneumonia as it is seen today and to point out how the diagnosis in most instances can be established early in the course of the disease.

A STATISTICAL SUMMARY OF THE CLINICAL MATERIAL

In this series were fifty-three men and thirty-five women, ranging from seventeen to eighty-four years of age, including representatives of almost every trade, race and social gradation that our country affords; in brief, such a typical collection of pneumonia patients as any doctor is likely to have.

THE SYMPTOMS OF PNEUMONIA

An analysis of the histories of these cases brings out several interesting points. The onset of pneumonia may be so sharp, sudden and painful that its beginning can be dated almost to a minute. There may be a sudden chill, severe pain in the chest, exaggerated by breathing, and soon followed by high fever, cough and bloody sputum. Here, the diagnosis is easy and stares one in the face. On the other hand, the onset of pneumonia may be much more gradual so that it is difficult to tell when the attack of bronchitis or grippe ends and the more serious illness begins. In this particular group were many instances in which the patients had been coughing for several days, possibly feeling a little chilly at night but not sick enough to call a doctor, and finally, there was a sudden access of cough, a high fever with prostration, delirium and a rapidly progressing consolidation. To make an early diagnosis in such cases may prove a difficult matter. Perhaps when our patients become sufficiently educated, — especially in times of influenza,—to give up treating themselves when they catch cold and will go to bed and stay there under their doctor's orders, there will be fewer fatalities from insidiously developing pneumonia. Any case, apparently, with cough and even slight fever deserves rest in bed as a preventive measure against pneumonia.

I have tabulated the early symptoms of these cases in order to emphasize the usual signs incident to the onset of a pneumonia.

Figure 1.

The Common Symptoms of Lobar Pneumonia

	Number of Cases	%
Pain	58	67
Cough	55	64
Chill	35	41
Bloody Sputum	32	37
Chilly Sensation	12	14
Dyspnoea	6	7
Vomiting	6	7
Prostration Without Symptoms	5	6

Pain in the chest was the commonest single complaint, described variously as dull, sharp, severe or mild, and referred to almost any point in the chest, back or abdomen. There appeared nothing characteristic about the pain beyond the fact that it was apt to be exaggerated by full breathing.

Cough was the next most common symptom. Here again there was nothing especially characteristic about it. It might be hacking and dry, or accompanied by a small or variable amount of sputum. Frankly bloody sputum or blood-tinged sputum occurred in over one-third of the cases. Blood-tinged sputum, therefore, may be a valuable sign.

It is difficult to differentiate the true shaking chill and the sensation of chilliness which so many of the patients noted when they were stricken with the illness. Fifty-five per

*From the Medical Clinic of the Peter Bent Brigham Hospital, Boston.

Read before the Essex South District Medical Society on March 6, 1929, at a Symposium on Pneumonia.

†For record and address of author see "This Week's Issue," page 1055.

cent. of the cases were conscious of some sudden change in their heat-regulating apparatus as the disease began. A chill, or sensation of chilliness, soon followed by cough, with blood-tinged sputum and pain in the chest, exaggerated by deep breathing, were the most common grouping of symptoms.

Surprisingly enough, few patients were consciously short of breath. As one observes the breathing of a patient with pneumonia, one is almost invariably struck with the rapidity of breathing which appears and yet, apparently, the patient himself does not often feel conscious of the difficulty.

Vomiting may usher in an attack of pneumonia. It is especially important to remember this when confronted with a child who is vomiting and also complains of severe abdominal pain and has a high fever.

Finally, there is a group of patients with pneumonia who are obviously ill and yet have no definite complaint beyond a profound degree of prostration. The presence of pneumonia must always be thought of in any case of febrile illness.

THE CLINICAL CHART IN PNEUMONIA

I have attempted to make a composite graph of the clinical charts of these cases from data obtained at the time of their entry to the hospital.

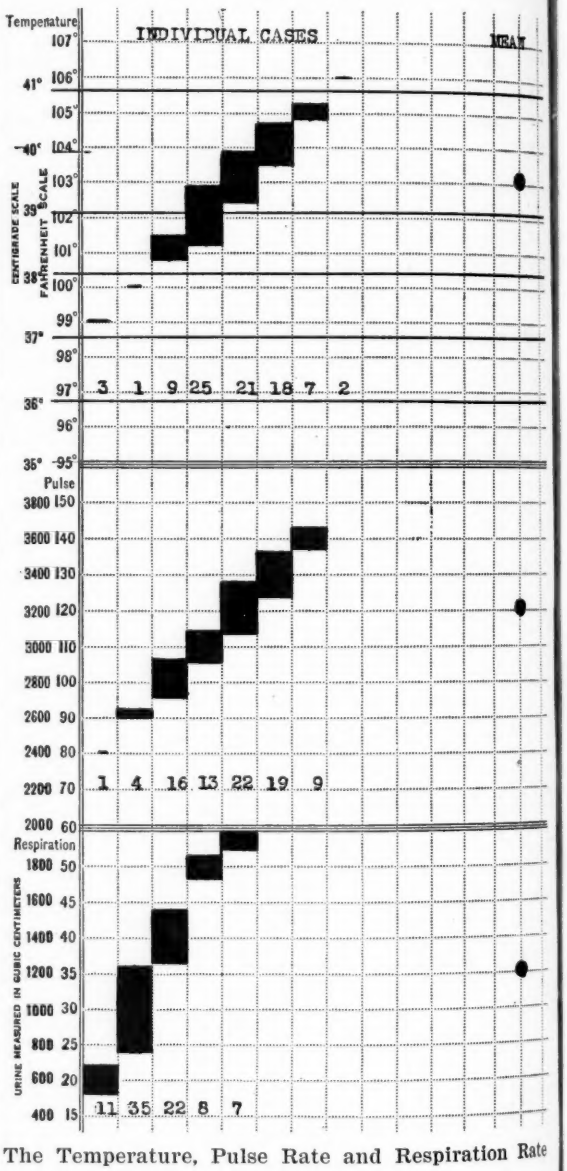
Pneumonia at its onset, it appears, rarely may be accompanied by no increase in body temperature, pulse or respiration rate. Usually, however, the temperature quickly reaches 102° to 103°, the pulse rate is about 120, and the respirations thirty or more to the minute, so that a typical pneumonia chart will show not only high fever, but also rapid pulse and respiration rates. The time at which these changes occur in relation to the onset of the disease is of considerable importance. Recently a medical student entered the Peter Bent Brigham Hospital with an acute respiratory infection and during recovery developed lobar pneumonia. His clinical chart is of interest as showing in a typical case how quickly the fever, increased pulse, and increased respiration rate developed after the onset of symptoms.

As can be seen, on the seventh day of his stay in the Hospital, when the pneumonia developed, there was a rapid rise in temperature, —six degrees within twenty-four hours,—closely followed by a rise in pulse rate. In this particular case the respiration rate was not markedly affected. During the time of the rising fever, there developed a leucocytosis which reached its peak in twenty-four hours. The physical signs of consolidation were evident within twenty-four hours from the beginning of the attack. The complete clinical picture of pneumonia, therefore, may develop with extraordinary rapidity.

THE PHYSICAL SIGNS OF PNEUMONIA

The physical signs vary to a marked degree. A person may have pneumonia without any demonstrable signs, or there may be dullness over an area in the chest, with tubular breathing, increased tactile and vocal fremitus, bronchophony and râles. On the whole, the physical signs of consolidation are usually easy to recognize, though at necropsy there is often a larger involvement than was suspected by clinical examination.

Figure 2.



The Temperature, Pulse Rate and Respiration Rate in Lobar Pneumonia*

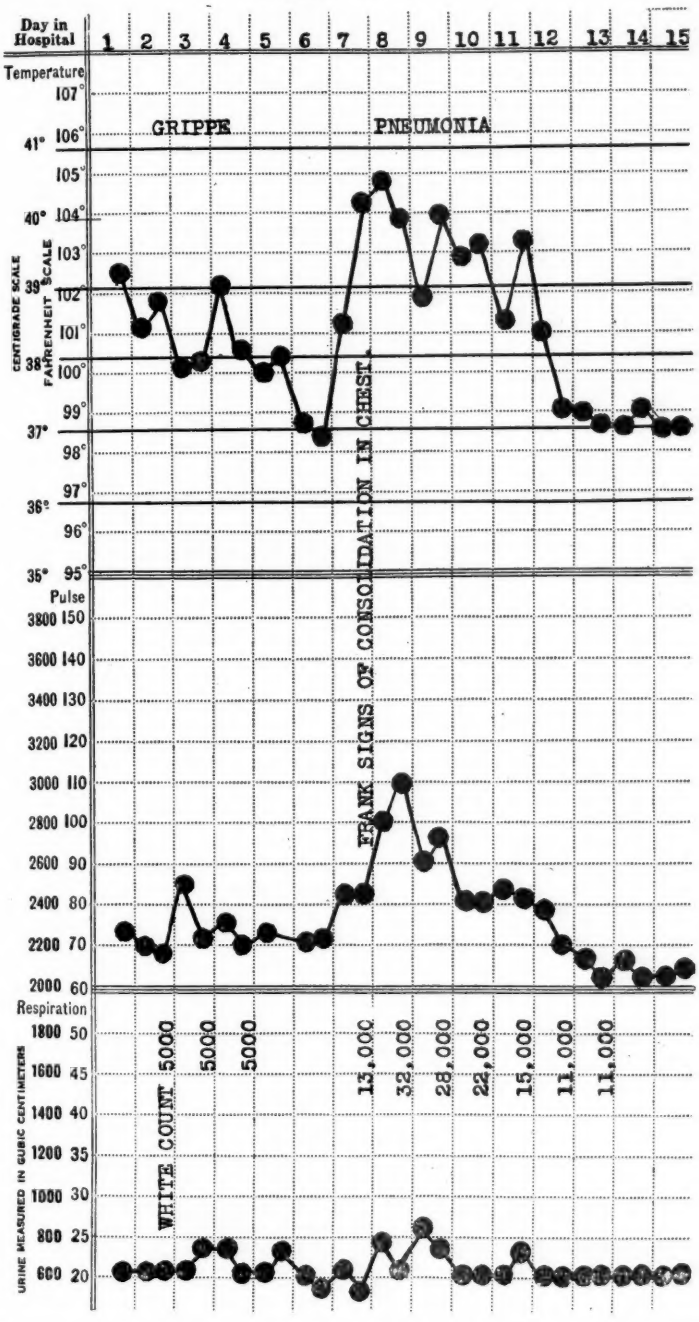
In this series were several cases in which it was possible to contrast physical signs with radiological signs and post-mortem findings. In general, the physical signs proved a most ac-

*In this graph the typed figures and solid columns represent the number of individual cases with temperature, pulse and respiration rates at the various levels recorded.

curate indicator of the underlying pulmonary pathology. This fact may help to give a gratifying sense of encouragement to the student or physician trying to improve his skill as a physical diagnostician. Physical diagnosis can be harmed by being elevated to a semi-sitting position and I am sure that this manoeuvre has brought to light areas of consolidation which would otherwise have been overlooked.

Fluid in the chest may produce all signs of

Figure 3.



The Development of Lobar Pneumonia in a Case Under Observation

mastered by practice and experience and developed to a surprising extent.

Certain common mistakes are easily made. One forgets, for example, how difficult it may be to examine a patient's back satisfactorily when he lies flat. A good rule, therefore, is to hold the patient upright and examine him while he is sitting up. I have never seen a patient consolidation except increased tactile fremitus; when there is a collection of fluid, the tactile fremitus is absent. Therefore palpation of the chest may be an extremely important procedure. Exploratory thoracentesis with a fine needle is a simple and harmless way of making the differential diagnosis in doubtful cases.

A pericardial effusion is often accompanied

by an area of varying size at the back of the left chest, over which appear physical signs of frank consolidation. This knowledge may be helpful in the diagnosis both of pneumonia and pericarditis.

Finally, given a patient with a history suggesting pneumonia, a clinical chart suggesting pneumonia, and an appearance suggesting pneumonia, the chances are that he has pneumonia, regardless of the lack of positive physical signs. In most cases, the signs of consolidation appear quickly, yet at times they do not become apparent until late in the disease, or even until after the disease has run its course. Do not be led away from the correct diagnosis, therefore, by lack of positive signs.

Figure 4.

A Comparison of Physical Signs, Radiological Signs and Necropsy Findings in a Case of Lobar Pneumonia

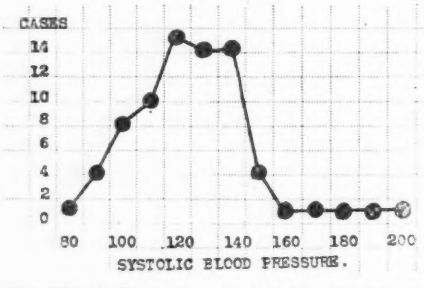
PHYSICAL EXAMINATION February 28	X-RAY EXAMINATION March 1	PHYSICAL EXAMINATION February 28
Front. Flatness. Bronchial Breathing. Râles at end of inspiration. Increased vocal fremitus.	Large area of consolidation involving upper and middle thirds of left lung.	Back. Dull Tympany. Bronchial Breathing at left apex. Râles scattered throughout both chests.

NECROPSY. March 3. Pneumonic consolidation of left upper lobe. Patchy consolidation at apex of lower lobe. Right lung congested. There is diffuse bronchitis but no definite consolidation.

THE BLOOD PRESSURE IN PNEUMONIA

We doctors like to use our blood pressure machines and have developed the habit of taking our patients' blood pressure readings almost as a routine. In pneumonia, as judged by this series, the systolic blood pressure is practically unaffected. Possibly the sudden onset of the illness tends to cause a drop in pressure, though the evidence on this point is by no means convincing. High blood pressure readings are not often obtained.

Figure 5.



The Blood Pressure in Lobar Pneumonia

The only practical point to be learned from this table is that since a relatively low blood pressure appears to be the rule in pneumonia, we need not be disturbed by the finding. The hypertensive patient who develops a patch of consolidation in his chest and coincidentally a normal blood pressure reading is not necessarily in a state of circulatory collapse and does not require heroic doses of caffein or digitalis. The finding of a low blood pressure level which becomes slightly lower each day is not invariably an ominous sign.

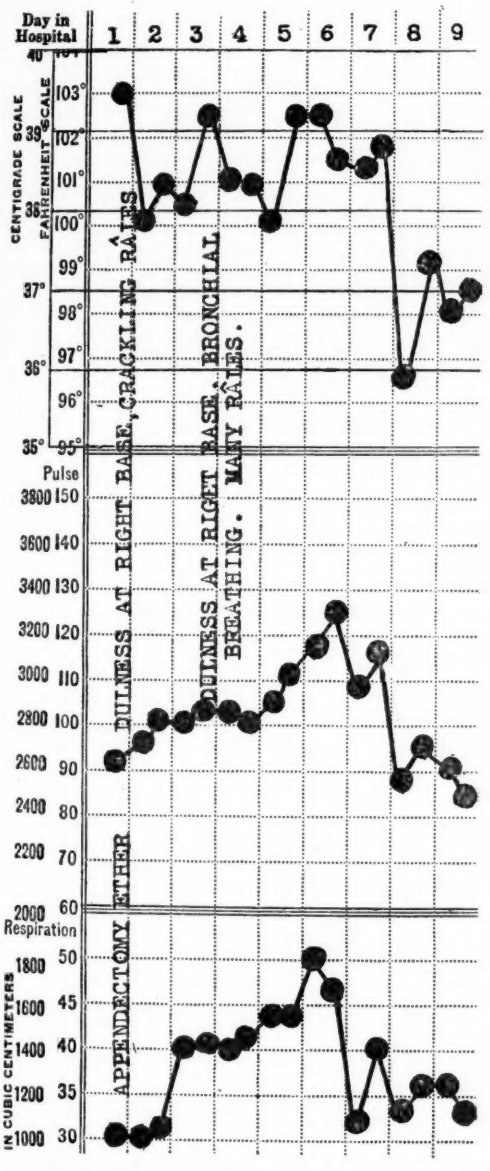
THE URINE IN PNEUMONIA

Of these eighty-six cases, only eleven (13%) had normal urines. Eighty-seven per cent. had urines containing varying amounts of albumin. In the sediment were granular or hyaline casts, leucocytes and occasionally red blood cells. Urine examination, therefore, is not of help in the diagnosis of pneumonia. One expects to find albuminuria and an abnormal sediment, and the finding is of no clinical significance. If one takes urinalysis in pneumonia too seriously, the diagnosis may even become obscure. I can recall seeing, last winter, a boy who, after exposure, suddenly developed a high fever, slight cough, pain in the back exaggerated by breathing, and physical signs suggestive of consolidation at the right base. Yet because he had gross hematuria, there was some doubt for several days as to whether he had pneumonia or a renal infection. The diagnosis would have been plainer had his urine never been examined.

THE WHITE BLOOD COUNT IN PNEUMONIA

The white count in pneumonia is usually elevated, but occasionally is normal or subnormal. In this series were five cases with a leukopenia of 5000 or less, thirty-eight cases with a leucocytosis between 11 and 20 thousand, and twenty-seven cases with higher counts, eight having more than 30 thousand white blood cells per cubic millimeters of blood. In all probability a series of recovering cases would show a more striking predominance of high counts. Since a leucocytosis is the general rule, however, it may be well to emphasize the occasional occurrence of a normal or sub-normal white count.

Figure 6.



Lobar Pneumonia Mistaken for Acute Appendicitis*

*I am obliged to the Massachusetts General Hospital for allowing me to publish this case.

THE DIFFERENTIAL DIAGNOSIS OF PNEUMONIA

Lobar pneumonia can be confused with a variety of acute illnesses. The possibility of its presence is to be considered in any case with a sudden and unexplained fever. It is a rare doctor who has not mistaken pneumonia for something else. I have made at least two glaring and avoidable errors in diagnosis which have made deep impressions on my mind.

When I was a senior house-officer at the Massachusetts General Hospital and on call for the Accident Room, a boy of 18 was brought in with the following history: Two days previously, while carrying a bag across Boston Common, he was suddenly seized with a severe pain in the pit of the stomach, shortly followed by nausea and vomiting. He felt weak and prostrated, became feverish, and went to bed. He entered the Hospital still complaining of pain in the abdomen, now well localized in the lower right quadrant. His temperature was 103°, pulse rate 90, and respiration rate 20. The white count was 26,000. The abdomen was held rigidly, but there was no distention. There was slight dullness over the lower right lobe posteriorly and a few crackling râles. A normal appendix was removed. The young man continued to have an uncomplicated pneumonia, from which he made a normal recovery.

In retrospect it is easy to believe that the diagnosis of pneumonia should have been made before operation. The history and physical signs were not characteristic of appendicitis but were much more like pneumonia. Often, however, and especially in young people, the two diseases are confused. If appendicitis suspects are carefully examined and due emphasis is given the history, chest examination, and type of febrile reaction, fewer patients with pneumonia will be subjected to laparotomy.

An elderly lady with hypertension suddenly developed pain in the left chest with cyanosis, cough, shortness of breath and a slight fever. In a few days there appeared in the back over the left base an area of tubular breathing with bronchophony. The patient continued to have a slight fever for several days without much change in the lung signs. She died suddenly and proved to have had an infarct of the heart, with the signs in the left chest due to a moderate hydrothorax.

Here again, it is easy to see that the diagnosis of cardiac infarct rather than pneumonia might have been made. The history is not that of pneumonia. Fluid in the pleural cavity should not be confused with consolidation in the lung by a careful physical diagnostician. Finally, it is very unusual for even an elderly person to have pneumonia without a considerable elevation of temperature. Patients with suggestive signs of consolidation in the chest but without

concomitant fever should be suspected of having some other illness than lobar pneumonia.

CONCLUSION

To sum up, certain facts are to be remembered in regard to the early diagnosis of lobar pneumonia. The onset and development of the disease is sudden. A chill or sensation of chilliness associated with cough, pain in the chest, fever and increased pulse and respiration rates usually usher in the attack. Signs of consolidation in the lung develop quickly and are characterized by increased tactile fremitus overlying the consolidated area, tubular breathing and bronchophony.

The blood pressure is not elevated. The urine usually contains albumin, casts, white cells and even blood. The white count may be markedly increased, though, on the other hand, leukopenia is occasionally encountered.

The presence of pneumonia is to be considered in any case with a sudden unexplained fever. There are times when an early diagnosis must be made entirely on the patient's clinical appearance as all physical signs may be lacking.

It gives me great pleasure to thank Mrs. F. S. Bascom for her help in assembling this paper.

ENDOMETRIOSIS; THE OCCURRENCE OF ENDOMETRIOMATA IN THE ABDOMINAL WALL. FOUR CASES FOLLOWING OPERATIONS IN THE FEMALE PELVIS*

BY JOE VINCENT MEIGS, M.D., F.A.C.S.†

INTRODUCTION

AT the Massachusetts General Hospital, between Sept. 27 and Nov. 21, 1928, three patients with endometriomata occurring in operative scars were operated upon for relief of pain. One other case, seen two years previously, completes the series of four cases reported here. This number of cases shows a too frequent occurrence of a probably preventable lesion and occasions considerable thought as to means to prevent its further occurrence. One case followed Caesarian section and the other three followed operations upon the ovaries and the uterus. Knowledge of the true nature of endometriomata would probably result in the prevention of many disagreeable secondary operations.

HISTORICAL

In 1921, John A. Sampson[1] of Albany, N. Y., presented to the American Gynecological Society a paper entitled "Perforating Hemorrhagic (Chocolate) Cysts of the Ovary, their Importance and especially their Relation to Pelvic Adenomas of Endometrial Type." This was the first explained and detailed account of the life history and pathology of the now well-known chocolate cysts, endometrial hematomas, endometriomata and adenomyomatas. Since his article many investigators have contributed further to the literature of these lesions but few to their etiology. Jacobson[4], in 1922, was able to demonstrate that rabbits' endometrium would grow in the animal's pelvis if placed there. In one case, after opening the uterine cornu of a pregnant rabbit, islands of endometrial-like tissue were later found growing in the pelvic peritoneum and not connected with the uterus. Jacobson has done further valuable work along these lines. Later, Sampson[2] offered as a theory of the etiology of pelvic endometriosis and allied lesions that many of them were due to the implantation of menstruating endometrium, which reached the pelvis in blood flowing from the tubal ostia during menstruation. In support of this theory, from which Sampson has never varied, Cron and Gey[5], in 1927, were able to grow in vitro cast-off bits of endometrial mucosa. These are the main historical steps in the development of the knowledge of this interesting lesion.

DESCRIPTION OF THE LESIONS

Aberrant endometrium may be found in many regions in the pelvis and in a few regions outside the pelvis. It is frequently seen in the wall of the uterus, where it is known as adenomyoma; in the ovary, where it is known as an endometrial hematoma, or as a chocolate cyst; in the recto-vaginal septum behind the cervix it is called adenomyoma of the recto-vaginal septum.

It also occurs in many other areas of the pelvic peritoneum, the tubes, growing into and on the sigmoid, in and on the appendix, in the umbilicus and occasionally it is found even as remote as the inguinal canal and the vulva. Lesions have been found in abdominal scars many times and these are often called implantation adenomyomas. It is probable that all these cysts, tumors and lesions should be grouped under one head for the etiology in all cases is probably the same. They are all probably due to transplantation of endometrial tissue either from the uterus or ovarian hematomas, or from growths from rests of the Müllerian or Wolffian bodies in the pelvis that have been stimulated by some unknown substance into activity. The stimulator is still a great question, but it may be the secretions of

*From the Surgical Services of the Massachusetts General Hospital.

†For record and address of author see "This Week's Issue," page 1055.

the ovary, the menstrual blood, or some other substance. The lesions on section show numerous small dark blue cysts that are filled with a grumous bloody material. This grumous bloody material is considered to be menstrual fluid and the endometrial-like tissue is responsible for it, just as menstrual blood occurs from the menstruating uterus. When seen in the pelvic peritoneum, small areas of dark bluish blebs are noted, the peritoneum is puckered about the blebs and some areas show a slight amount of growth. The ovary occasionally shows small bluish blebs on its surface and at other times a fairly good-sized cyst adherent to the pelvic peritoneum or posterior wall of the uterus may be found. When the cyst is released, the pelvis may be filled with sticky, black chocolate syrup. These lesions have been encountered by surgeons for years, but until 1921 their true nature was not actually understood. The endometrial cysts and hematomas may be recognized by finding on examination adherent masses in the pelvis, with a history of sterility or few children, with pain at periods becoming increasingly worse, and progressive constipation. In the recto-vaginal septum a small cherry-like nodule can often be seen behind the cervix, which bleeds on manipulation and suggests a small area of granulation tissue. In the groin and in the abdominal scar a slow-growing nodule that is quite painful at menstruation is enough to suggest the possibility.

PATHOLOGY

This typical endometrioma or adenomyoma shows a firm, hard tumor without capsule, which in gross section shows small cystic areas containing bloody fluid; microscopically, a glandular structure with characteristic uterine stroma about it and frequently, though not always, areas of smooth muscle. Microscopically it looks, in most instances, like endometrium and the diagnosis is comparatively easy. Often hemosiderin, the end product from old hemorrhage, can be seen packing phagocyting endothelial leukocytes. In most instances the diagnosis can be made at once, but occasionally it is difficult to decide whether a single epithelial gland-like structure in the ovary or tube is a so-called "gland inclusion", a very early ovarian cyst, or a young endometrioma. Some gland-like areas in the pelvic peritoneum offer difficulty also as gland inclusions are occasionally seen there and small endometriomata may be easily mistaken for them. On the whole, endometriosis or endometrial hematomas do not present difficulties to the trained pathologist who is seeing them frequently.

THEORIES CONCERNING ABERRANT ENDOMETRIUM

There are numerous theories to explain endometriosis and a few of them, with arguments pro and con, are worthy of serious consideration. No theory has been definitely proven to the satisfaction of the investigators of the opposing side. All are agreed that the tissue microscopically looks like endometrial tissue and that in the main it has the function of menstruation which characterizes endometrium. Sampson's theory of implantation from the uterine endometrium by way of the tube to the ovary or the pelvic peritoneum certainly seems reasonable. The under and lateral surfaces of the ovary are most usually affected and this would be the area most likely to be touched by falling or wandering endometrial cells. The pelvic peritoneum behind the uterus should be, and is, a likely place. Sampson believes that many of the implants in the pelvis come from the bursting of an endometrial hematoma of the ovary (a recognized menstruation lesion) with the scattering of pieces of cast-off endometrial-like tissue and the implantation of this tissue and its growth. This is substantiated by finding endometrial implants in the predicted regions and in finding the cyst adherent at site of rupture and from it growth of endometrium in the pelvic tissue from direct extension. This explanation seems very reasonable and is easily accepted. Novak[6] however, in particular, is against the implantation theory of cast-off endometrium growing in the pelvis or the ovary. He doubts the proof of viability of menstruating endometrium and says that the flow in the normal tube is toward the uterus, that tissue large enough to grow could not in most instances get through the tubal ostium at the uterine cornu. Sampson has noticed in many instances blood flowing from the tubes in cases operated upon during menstruation and again in cases operated upon following curettage. A few cases of blood flowing from the tubes in patients operated upon at the Massachusetts General Hospital have been noticed and attention called to this fact at the time of operation. It is not a very unusual experience to see blood oozing from the tubes and notice an ounce or two in the pelvis following curettage. It does seem possible that endometrium might reach the ovary and pelvis this way. Sampson feels sure that numerous implants of endometrium may come from the use of the curette, causing blood and endometrium to flow through the tubes into the peritoneal cavity. It may be so, but the necessity of curettage in uterine bleeding cases to determine the diagnosis overrules his objection. He makes the diagnosis of cancer of the fundus from the history in most instances. Bleeding after the menopause is supposed to be almost diagnostic of cancer, but certainly the cases seen at the Massachusetts General Hospital do not bear this out, for not over twenty per cent. of patients with bleeding after the menopause have fundal carcinoma. Therefore, hysterectomy without previous curettage and frozen section diagnosis is not fair to the patient. Diagnostic curettage is a very important operation, but too much stress cannot be laid upon care in its execution. Perhaps an occasional cancer may be

spread or an endometriosis planted, but the mortality, morbidity and risk of hysterectomy in all these cases in which the diagnosis is not cancer will be avoided. Sampson's advice to tie the fimbriated ends of the tubes when doing a hysterectomy for any cause is a piece of technique that probably should be followed. It is not done in most hospitals and at the Massachusetts General Hospital very rarely. However, in fundal cancer, especially after curettage, this step should be taken at once after the abdomen is opened, even though it may be too late. To prevent endometrial implants it should be done, but the necessity is not as great as in cancer.

The question of the similarity of this endometrial-like tissue to true endometrium is occasionally questioned. All the tissue does not menstruate and some of it does not react to the ovarian stimulation. The endometrial-like tissue may come from coelomic peritoneal epithelium or from Müllerian or Wolffian rests, but it is so much like true endometrium that it is difficult to say it is not. Either it is a growth of endometrial tissue or it is a development of some anlage with the highest amount of differentiation toward uterine endometrium. The removal of the ovary will stop its growth and cause it to atrophy. This atrophy following castration has been demonstrated many times.[7, 8] The tissue is like endometrium, it is often ciliated, causes whenever possible a smooth muscle growth about it, develops a decidua and menstruates. Sampson believes also that the menstrual blood from the uterus, or menstruating cyst, or tumor, prepares the peritoneum so that falling endometrium will become implanted upon it. The reason why endometrium, cast off by the uterus, will grow upon the smooth pelvic peritoneum and smooth walls of an ovary is a puzzle and of course must be satisfactorily answered before the implantation theory can be fully accepted. There must be roughing or irritation of the smooth tissue, if growth is to take place. The ovarian lesion can be explained by the implantation of the tissue in the ovary at, or about, the time of ovulation. Adenomyoma of the recto-vaginal septum, from its very position, is much less likely to be an implantation than to be a direct extension from an adenomyoma of the uterus or from an adherent chocolate cyst in the pelvis directly behind the lesion.

Sampson[3] believes that inguinal endometriosis may be due to metastasis through the venous sinuses in the uterus that are opened during menstruation of that organ. If this is true, it satisfactorily explains this aberrant endometrium, which is the most difficult of all endometriomata to explain. However, if endometrial tissue metastasizes through venous channels to the inguinal region, it would be logical for it to reach the lungs and even the general systemic circulation. There is no evidence to show this action and for this reason it is difficult to call Sampson's latest theory a satisfactory explanation. Occasionally it is stated that one of the reasons for not believing it to be true endometrial tissue is that complete ablation does not stop its growth. In Case No. 3 of this series the left ovary was removed at one operation and later the right ovary and uterus; the question was raised as to why the lesion in the scar grew, and because it grew under these circumstances, how it could be adenomyoma. The answer is that all the ovarian tissue could not have been removed or else there was an aberrant ovary, for the patient, even though the ovaries and uterus were removed, menstruated one day each month and had had no symptoms of the menopause. This explains, in all probability, the other cases where atrophy has not been noted when all ovarian tissue had been thought removed. It must be remembered that all the ovarian tissue must be removed. The slightest bit left will allow continuation of growth.

TREATMENT

The treatment of endometriosis is very definite. Complete eradication of the lesions is one way of attack and the other is total ovarian ablation. The latter will cause an atrophy and cessation of growth, following which the symptoms eventually disappear. X-ray and radium in doses sufficient to bring about the menopause will also result in the cessation of growth. Adenomyomas of the uterus, chocolate cysts of the ovaries and local tumors should be removed or excised, and if the entire distribution of the lesion cannot be eradicated, castration must be done of necessity. Without the stimulation of the ovary the endometrial-like tissue will not menstruate or desquamate but will show definite microscopic atrophy and the whole tumor will be reduced in size, just as the endometrium atrophies and the uterus becomes much smaller at the menopause or after castration. Tumors of the recto-vaginal septum have been described and the treatment indicated in a previous paper.[8] It is not necessary to remove the growth by a mutilating operation because we know removal of the ovarian stimulation will cause atrophy. This has been definitely seen at the Massachusetts General Hospital.[8] Graves[7] reported a case of adenomyoma causing intestinal obstruction; he made a temporary colostomy and removed the uterus and both ovaries and the tumor receded and the intestinal contents later resumed their normal path. We then have entire removal of the lesion as a method of treatment and removal of the ovaries or their radiation to the menopausal dose as methods of cure.

PROGNOSIS

The prognosis is excellent, provided the lesion is definitely understood and modern and correct methods are used to either remove it or cause cessation of growth and atrophy. Case No. 3 in the series shows the necessity of complete ablation, for even with the uterus removed and both

ovaries supposedly removed, growth continued. Fortunately, enough endometrium remained following the hysterectomy to allow the small amount of ovarian tissue to make itself evident. The pelvis, in this case, will be x-rayed and a cure is confidently expected. Multiple operations are usual because the operator has not understood the lesion and because conservative treatment was deliberately chosen. Most of these patients are sterile even though the tubes are practically always patent,[3] the reason being that the uterus is frequently drawn back into retroversion by an adherent cyst. This probably interferes with the normal physiology in such a way that the patient does not conceive. If a tumor has been operated upon to preserve the child-bearing function and if not all the tumor has been removed, a pregnancy with its endometrial atrophy due to lactation would probably cause a temporary cessation of growth and further pregnancies with lactation would probably put off the possibility of further surgery indefinitely. Theoretically, lactation atrophy of the lesion must occur just as menopausal atrophy does.[9] It is fair, then, to use conservative methods when the patient wishes it and when the history of the lesion is understood. But the possibility of further surgery must be explained carefully to the patient. There may be fatal cases due to operative difficulties because of the severity of the "pelvic inflammation" or pelvic "adhesions" due to the growth. Some of the

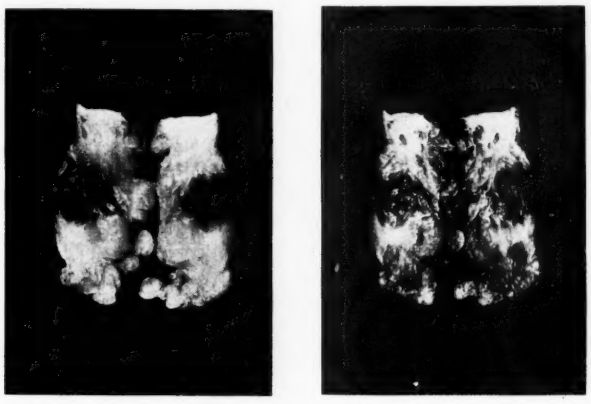


FIGURE I. Photographs taken of the lesion removed from the abdominal wall of Case III. The fat, connective tissue and cysts containing blood are well seen.

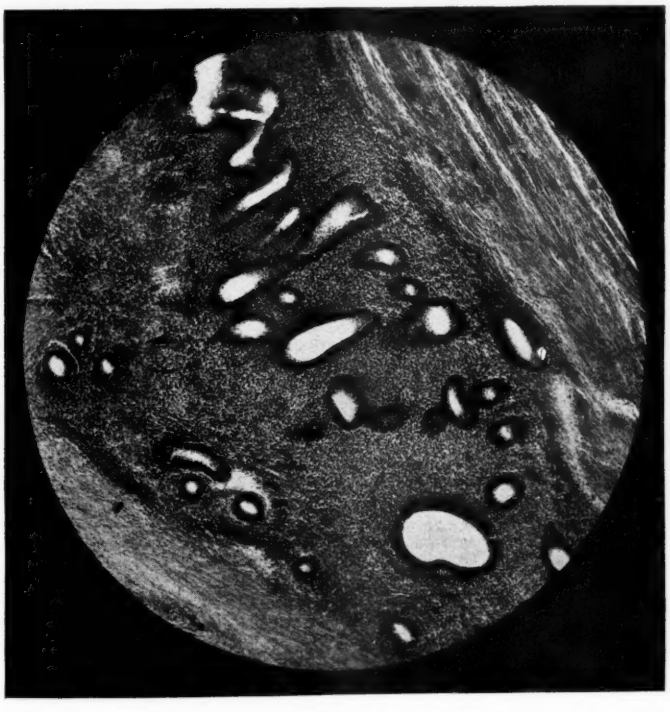


FIGURE II. Photomicrograph of tissue removed from the abdominal wall in Case III. The similarity of the glandular structures and stroma to normal endometrium is clear. Ciliated columnar epithelium with a stroma of round cells is characteristic.

surgery may be extremely difficult and a very advanced case will baffle the most experienced operator. Deaths due to obstruction can occur and the sigmoid may be completely blocked by a growth into the wall of the bowel. This growth starts from the peritoneal side and grows toward the lumen and pushes into it. The whole picture is that of a slowly progressive tumor which is invasive and causes severe adhesions; therefore its seriousness must not be overlooked.

PREVENTION OF ABDOMINAL WALL IMPLANTATIONS OR EXTENSIONS

The lesions in the abdominal walls, particularly in scars following operations in the pelvis, probably can, for the most part, be prevented. In the first place, it is possible that some of them are due to the fact that small pieces of endometrium, or pieces of an endometrial hematoma or cyst are dropped into the abdominal wound during operation. This can, in large measure, be guarded against by protecting the skin, fat, fascia and muscle from soiling by clipping protecting towels to the peritoneum instead of to the skin. All Caesarian sections, myomectomies, hysterectomies, cases of ovarian cysts, extrauterine pregnancies, etc., must be thought of as potential sources of the beginning of this disease. Also, with this protection in mind, care must be taken to wall off intestines, etc., from any possible contamination from falling endometrium. Occasionally a case may follow the suspension of the uterus to the abdominal wall by the round ligaments or by a ventral suspension. The uterine cornu frequently is the source of an adenomyoma, as is the fundus of the uterus. It is possible that the suspension or fixation suture may pass through the tumor and thence through the abdominal wall. The needle and catgut, or silk used, may carry the endometrial tissue, or it may possibly grow by direct extension from the point of contact of the uterine cornu or fundus. This can be prevented if care is taken to observe the size of the uterus and to remember that it may be adenomyomatous and to note that the so-called "salpingitis isthmica nodosa" is not present in the horns of the uterus. This latter is easily recognized and for this reason can be avoided. The infrequency of scar endometriosis following all these operations somewhat mitigates against the theory of implantation and suggests the need of some other factor to cause growth. These lesions ought to be extremely frequent, but only a few cases of implantation in Caesarian scars have been reported and not many more in the scar of all other abdominal operations. However, it seems obvious that the growths in scars probably come that way, and so all means to prevent their occurrence should be undertaken.

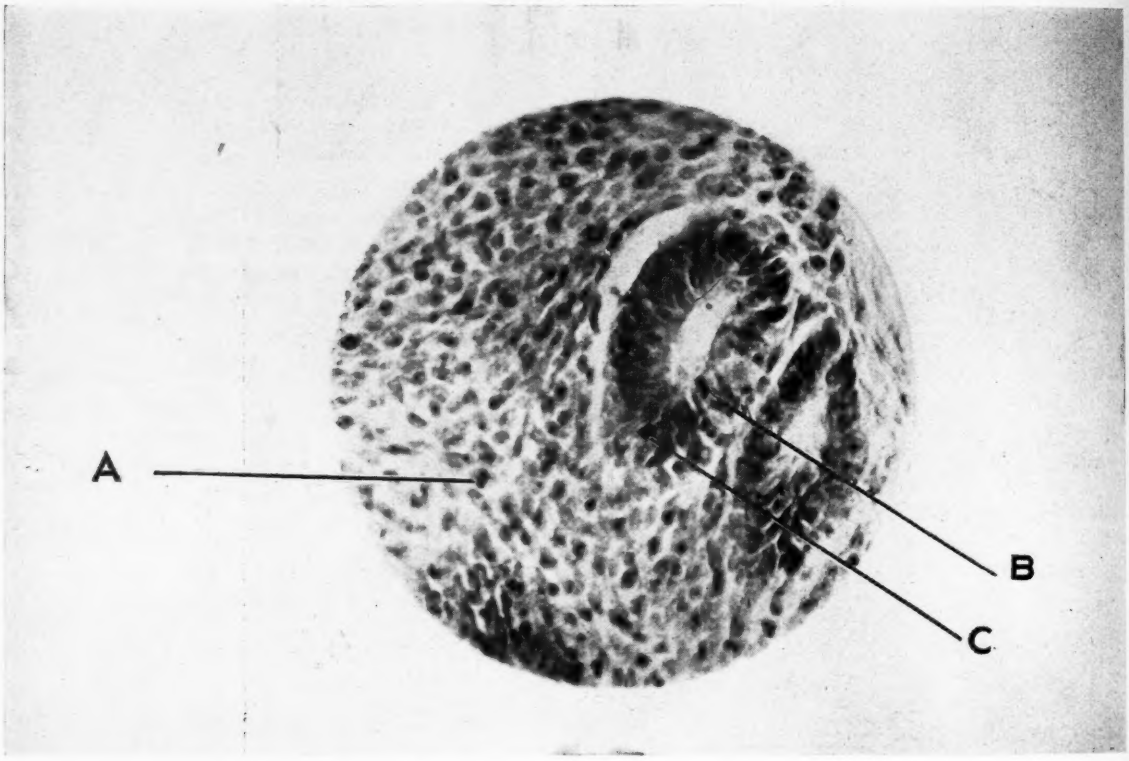


FIGURE III. Two endometrial-like glands under an oil immersion lens. Mitotic figures denoting activity shown at A, B and C. Two mitoses in the gland epithelium and one in the stroma. These figures are not very clear because of the difficulty of keeping them all in focus at the same time.

The above protections should be established in all surgical and obstetrical clinics to prevent abdominal scar implantations. It must never be

FIGURE IV. Photograph of a uterus, both tubes, both ovaries and appendix removed from a patient by Dr. G. W. W. Brewster on July 26, 1928. The patient's chief complaint was abdominal pain. Ether examination showed a cystic mass in the region of the right ovary and an inflammatory mass on the left. At operation typical chocolate cysts of both ovaries were found. The cysts ruptured, spilling a great amount of tarry black menstrual blood. The appendix was adherent to the right ovarian cyst. The left ovary shows a "chocolate cyst", the ruptured area which was adherent to the broad ligament is clearly shown. The right ovary was adherent to the back of the uterus where a dark rough area can be seen. This dark area probably contains adenomyomatous tissue which has extended directly from the right ovary. The appendix with a large shaggy tip is shown in the lower right hand corner. It was adherent to the "chocolate cyst" of the right ovary. The pathological report from the Palmer Memorial Hospital Laboratory follows: "The ovaries are both fairly symmetrically enlarged, measuring 5 cm. in diameter and about 3 cm. through, each containing a large cyst with dark brown fluid and having a chocolate appearance. There are several small clear cysts attached externally near the tube. The tubes and uterus were not opened but appear negative. Microscopical diagnosis: endometrial cysts of both ovaries with extension to the appendix".

FIGURE V. Photomicrograph of the wall of one of the "chocolate cysts", or endometriomata in Figure IV. Columnar epithelium lines the cyst, old blood and debris are in the lumen, hemosiderin in endothelial leucocytes beneath the epithelium. A suggestion of "stroma" can be seen. At the left is a small endometrial gland.

FIGURE VI. The wall of appendix near the tip. The lumen is nearly obliterated. The dark area in the wall is "old blood". It is made up of endothelial leucocytes full of hemosiderin. This establishes the fact that this blood is not due to a fresh hemorrhage but has been present in the wall of the appendix long enough to change into hemosiderin.

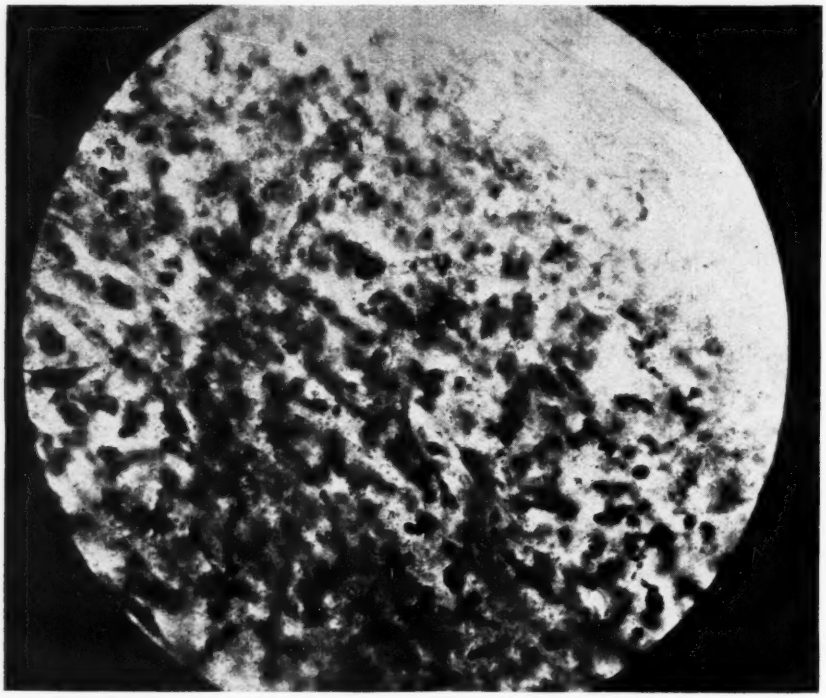


FIGURE VII. High power of the wall of the appendix shown in Figure V. This shows the granular appearance. Much hemosiderin is present, most of it contained in endothelial leucocytes.

forgotten that the very few cases found may not be all that will be discovered on more careful search; the scarcity, however, does make for neglect of these technical details. It is interesting to note that no case of endometriosis of the abdominal wall has been reported in any series of cases of transplanted ovarian tissue in the rectus muscle. Perhaps this is because all ovarian tissue about to be transplanted has been very carefully selected. However, if the ovary has the power of growing these lesions, it is reasonable to expect a report of its presence at least once. There are many things not consistent with the theories offered to explain the le-

sions. The implantation theory of Sampson is the most suggestive with the Müllerian and Wolffian rests the next most plausible. But perhaps, like the greater number of tumors, the true etiology is not known and their cause will only be explained when the origin of tumors in general is accurately ascertained.

Following are the records of four cases seen at the Massachusetts General Hospital, together with comments on each.

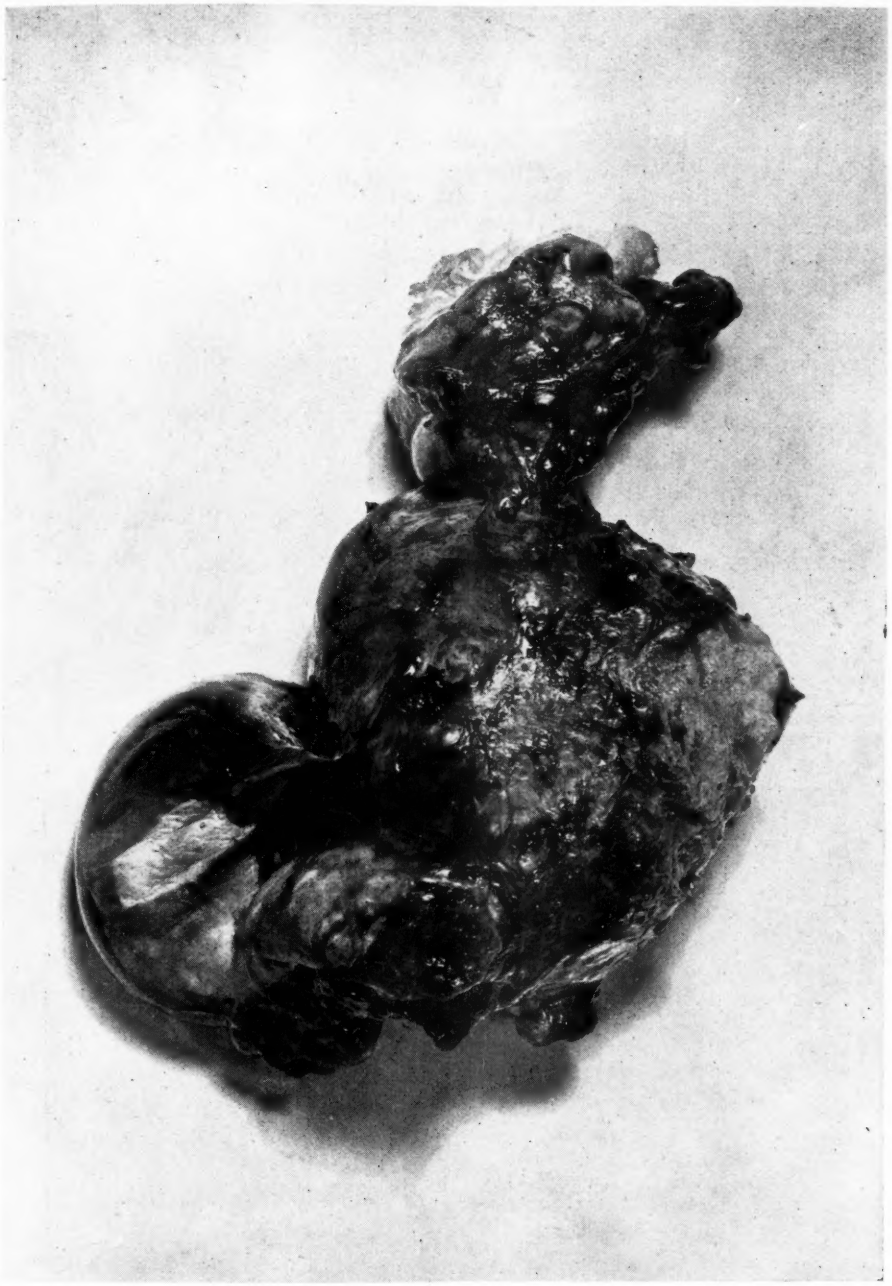


FIGURE VIII. A uterus with both tubes and ovaries attached. Removed from a patient who had complained of a tired feeling with an increase in size of menstrual periods. Examination showed a large uterus with a fair sized fibroid in the left vault. At operation Jan. 17, 1929, bilateral "chocolate cysts" were found. On releasing the adhesions tarry chocolate fluid escaped into the pelvis. Hysterectomy was performed removing both tubes, and both ovaries. The left ovary contains a cyst adherent to the top of the uterus. The right ovary was adherent to the back of the uterus. The small, dark area on the right side of the uterus is without doubt an area of extension of adenomyoma from the chocolate cyst of the right ovary. The tubes in this case were both patent, as Sampson suggests they always are, for without open tubes his theory of implantation from the uterine endometrium could not be considered. The microscopical diagnosis from the Palmer Memorial Hospital Laboratory follows: endometrial implants of both ovaries, tubes negative, corpus hemorrhagicum and simple cysts of the ovary.

CASE No. 1. E. S. 278897. Age 29 yrs. No children. This patient was operated upon in August, 1920, a left nephrectomy for left pyonephrosis being performed. In July, 1925, the right Bartolin's gland was opened and drained. In September, 1926, a cyst

of the vulva was removed and believing the patient had pelvic inflammation, a laparotomy was performed, a supravaginal hysterectomy was done, and the left tube and ovary and appendix were removed. The nodule was noticed near the pubis. On March 19, 1928, the patient complained of some lower abdominal pain which was not relieved following the operation. She flowed three weeks in one month and

FIGURE IX. Photomicrograph presenting the usual picture of glands and stroma resembling uterine endometrium from one of the cysts in the specimen shown in Figure VIII.

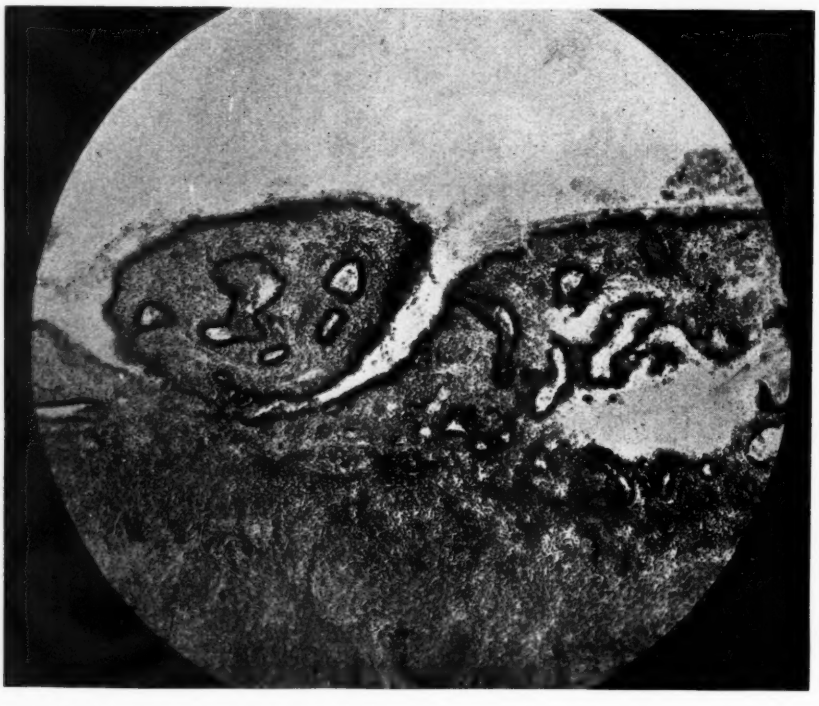


FIGURE X. Endometrial-like tissue lining the wall of one of the ovarian cysts seen in Figure VIII. Difficult to distinguish from normal endometrium.

uterus was large and boggy and the pelvis full of "inflammatory tissue." The left ovary contained a cyst the size of a hen's egg. The pathological report showed normal endometrium. No slides were cut of the ovary or appendix. In November, 1926, a small then regularly for six months. The patient noticed that the lower end of the abdominal wound was hard and constantly very tender, being worse just at the menstrual periods. At admission, on physical examination, the suprapubic scar looked well healed.

At the lower end, in the region of the pubic hair, was a hard, painful, fixed mass densely adherent in scar tissue, the size of a hickory nut. Pelvic and rectal examinations were negative. On Nov. 21, 1928, the patient was operated upon and scar and skin excised. A tumor the size of a horsechestnut was found, which had invaded the fascia and both recti muscles for a short distance, and the peritoneum beneath it. The entire mass was removed in one piece. The peritoneal cavity was opened. (No mention was made in this operation of the condition of the pelvis at this time.) The peritoneum was then sutured, the recti muscles approximated and the fascia, which could not be brought together, was re-ënforced by a living fascia lata graft. The pathological report, No. 26:9:176, was endometrioma; a description of it follows: "A solid oval tumor measuring 2½ cm. by 4½ cm. by 5 cm. One surface is covered with peritoneum. On section it has a firm, reddish brown fibrous surface filled with small blue cysts and areas of hemorrhage. The microscopic examination shows cellular connective tissue containing islands of endometrium. The gland tubules are dilated and filled with hemorrhagic and cellular exudate. The stroma and connective tissue contain blood and lymphocytes. Occasionally endothelial leucocytes are found full of hemosiderin."

Comment: In all probability this patient had endometriosis which was unrecognized at the time of the operation in 1926. However, it might be that during the hysterectomy tissue was dropped from the uterus into the wound, or, if the ovarian cyst was an endometrioma, it might have been spilled during removal. The lesion in the scar was noticed five months following the hysterectomy. *Jan. 30, 1929:* The patient has been perfectly well to date. She still has her right ovary and x-ray treatment was advised to destroy its function and perhaps prevent recurrence of the growth in the abdominal scar.

Case No. 2 E. S. 293945. O. P. D. No. 41469. Age 27 yrs. 1 child. Two years ago this patient had a Caesarian section performed. Six months later she first noticed a "drawing" sensation in the region of the scar. She supposed this to be due to adhesions. Six months ago she began to have real pain in the upper part of the scar. The pain gradually became worse. She then noticed a small lump in the upper region of the scar. It was painful most of the time but markedly more so during periods, when it was difficult for her to stand up and straighten out. Examination showed a well-healed midline scar. At the upper end there was a firmly fixed tumor underlying the skin, about the size of a hickory nut. It was painful on manipulation. On September 27, 1928, she was operated upon and the painful scar excised. Dissection showed that the upper end of the scar was occupied by a tumor about 4 cm. in diameter. This was excised and the abdominal wall repaired. The tumor started just under the skin and involved the scar and fascia, but, so far as could be told, no muscle fibres, the muscle itself being pushed to one side. Pathological examination (No. 28:9:137,) showed a narrow area of skin containing a linear scar. In the subcutaneous fat at one end there was an ill-defined hard tumor about 2 cm. in greatest diameter. On section it had a reddish gray firm surface which flecked with tarry blue cysts. On microscopic examination the tumor showed a structure containing clusters of gland tubules in a stroma of small round cells resembling normal endometrium with bundles of smooth muscle. The tubules were dilated and filled with blood and cellular debris. The patient was seen October 28, 1928. Examination showed the scar well healed. There was a slight dimpling of the skin in the region from which the tumor was removed. The pelvis felt normal.

Comment: The etiological factor in this endometrioma was probably the Caesarian section, decidua being spilled into the scar at the time the uterus was opened. However, it is still possible that the patient has an endometrial cyst of the ovary and she must be watched carefully for future developments.

Case No. 3. E. S. 258983. 32 yrs. old. No children. This patient was operated upon in 1920; her appendix and left tube and ovary were removed. She came to the Massachusetts General Hospital October, 1923, complaining of dysmenorrhea and pain in the left lower quadrant accentuated at the time of her periods. The periods were regular, every 28 days, lasting five days and not excessive. She was badly constipated. Examination showed the uterus in third degree retroversion and drawn to the left side. The patient was operated upon in October, 1923. The uterus was found completely retroverted, three times the normal size and boggy. A small fibroid the size of a filbert, 1 cm. in diameter, was found in the left side. The left tube and ovary apparently had been removed. The right ovary looked fairly normal. There were a few adhesions about it, which were freed. The uterus was suspended to the abdominal wall by the round ligaments. It was decided that if this did not relieve the symptoms, the patient should be given x-ray treatment later on. On June 8, 1927 she was examined in the Out-Patient Department, on complaint of pain in the left lower quadrant. A hard mass was felt in the left vault and she was advised to enter the hospital for operation. At this time she complained of pain in the old abdominal scar at the time of her periods, which was first noticed five months and previously. She had pain in her wound only near the time of her period or during it; her periods were perfectly regular. She had been married six years and had no children. At this time there was a question of a lump the size of a walnut beneath the broad suprapubic scar. She was operated upon Feb. 6, 1928. A few adhesions in the pelvis from previous operations were found. The posterior surface of the uterus was rough. The uterus itself contained hard nodules. The right ovary was cystic. The uterus and right tube and ovary were removed. At this operation the fundus was grasped with tenacula. Pathological examination No. 28:2:54) showed a nodular uterus the size of an orange amputated through the cervix, the tube and ovary attached. On section it contained several old fibrous tumors, which were filled with thick brownish fluid. The ovary was enlarged and contained a cyst about 3 cm. in diameter filled with thick brownish fluid. Microscopic examination of the uterus and tubal tumors showed a similar structure. There were islands of normal looking endometrium scattered throughout the stroma of smooth muscle. Many of the gland tubules in the endometrial tumor were dilated and some formed sizeable cysts. The cyst of the ovary also contained tissue similar to endometrium. The diagnosis was multiple adenomyoma and epithelial lined cyst of the ovary. Oct. 26, 1928 (third re-ëntry) the patient came again into the hospital, complaining of pain in the left abdomen in the site of the operative scar which was made five years ago. She had been perfectly well since the last operation except for this lump in the scar, which was noticed soon after leaving the hospital. The lesion was growing and was more and more

tender, particularly at the time of her period. She flowed for one day each month. Examination showed three linear scars near the midline suprapubically. In the left side of the old scar was a very tender tumor, irregular in outline and firmly adherent to the abdominal wall. A diagnosis was made of endometrial implantation. At operation, under spinal anesthesia an incision was made directly down upon a tumor in the belly of the left rectus muscle. It was found to consist of inflammatory-like tissue, in the midst of which was a very small cyst containing blood. A section of this tumor was removed for diagnosis. (Figure 1 shows a photograph and photomicrograph of this tissue.) Pathological examination (No. 28:11:82) showed a small fibrous fragment containing round bluish cysts. Microscopic examination divulged a cell rich connective tissue small islands of endometrial-like tissue. The glands are irreguiar in size and shape and often dilated. The diagnosis was endometrioma.

Comment: This patient has had four operations and after the second one noticed a lump in the scar. At the third operation this was completely disregarded. It will be noted that both tubes and ovaries and uterus were removed, but the patient still menstruated one day each month, which, of course, means that all the endometrium and all the ovarian tissue were not removed. This is the reason why the endometrioma in the abdominal wall kept growing. She had salpingitis isthmica nodosa. It is possible that the suspension done at the second operation may have been the etiological factor.

Case No. 4. W. S. 279483. O. P. D. No. 615027. 30 yrs. old. 2 children—one 8 yrs. and one 6 yrs. In 1923 this patient was operated upon and a right salpingo-oöphorectomy and hysterectomy were done. In September, 1926, in the Out-Patient Department, she complained of pain, often severe, in the right side over the operative scar. No pathology was found at that time. At this admission in October, 1926, she said that she had had abdominal pain for two years following the operation in 1923. She had to go to bed with dull ache in the right side between attacks. Examination showed a midline scar and at the upper end of the scar a definite tumor was felt, the size of a walnut. It was thought to be either in the rectus muscle or in the abdominal cavity. It hurt the patient to sit up when her abdominal muscles were contracted. Pelvic examination showed a relaxed pelvic floor and a lacerated cervix. A diagnosis of hernia or tumor in the scar was made, with adhesions beneath the scar. Operation was performed October 28, 1926. An incision was made over the upper portion of the old scar. A hard area in the left rectus muscle was located. It was about 3 cm. in diameter. On section this mass showed dark colored areas resembling old blood stains. The mass was excised. The appendix was removed and the stump buried. The uterus had been removed. There were dense adhesions over the stump of the cervix. In the left side of the pelvis a small mass could be felt, buried under adhesions, that was thought probably to be ovary. This was not removed. Pathological examination (No. 26-10-124) showed a purplish red nodule measuring 3 cm. in its greatest diameter. One of its surfaces was covered with fat. Microscopic examination of the tumor disclosed a structure of irregular gland tubules lined with somewhat atypical epithelial cells. They had a stroma rich in round cells. The framework of the tumor was composed of cells rich in connective tissue and containing areas of hemorrhage. No smooth muscle fibres could be identified. The diagnosis was adenomyoma.

Comment: It is possible that the tumor in this case was spread during the hysterectomy, although the findings of the buried ovary suggests the possibility of a chocolate cyst being present at the time of the first operation.

Included in this paper are photographs and photomicrographs from endometrial-like cysts, extensions, etc. No description of Figures IV to X will be found in the text of this paper. They are included to demonstrate how chocolate cysts, endometrial hematomas or endometriomata look in the gross and to show microscopic findings typical of most of them.

CONCLUSIONS

(1) Endometrioma of the abdominal wall is not an infrequent occurrence for three cases were found in the wards of the Massachusetts General Hospital within two months.

(2) The finding of endometrioma in operative scars seems to substantiate Sampson's theory of implantation.

(3) There are so few cases, compared to the great number of surgical operations in which the endometrium is exposed or cut across, that some other factor besides implantation may be necessary for the growth of the lesions.

(4) No theory fully explains the presence of all aberrant endometrium.

(5) Greater protection of the abdominal wound during pelvic operations would probably prevent some scar endometriomata.

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NEW ENGLAND SURGICAL SOCIETY

RUPTURE OF A PREGNANT HORN OF A BICORNATE UTERUS*

BY P. E. TRUESDALE, M.D., F.A.C.S.†

THERE is not enough practical information in the subject of uncomplicated bicornate uterus to warrant its presentation before a body of general surgeons. When its occurrence, however, is not bargained for; when its nature is such as to call upon the resources of the operator to deal with the exceptional, the unexpected and unforeseen; and when it is responsible for a condition from which a patient has become almost exsanguinated, this anomaly cannot fail to arouse interest and impart a lesson.

In general, malformations of the uterus form a large group of the genital anomalies some of which are of engaging interest. The Uterus Accessorius described by Holländer[1], for example, is a strange malformation. While performing a laparotomy he found a second uterus lying in front of the normal one, between it and the bladder. This accessory uterus had neither adnexa nor round ligaments, was anteverted and contained some placental tissue. There was a single cervix with two orifices separated by a bridge of tissue. Depage[2], also during a laparotomy, found a still more complicated and puzzling uterine anomaly which he termed Trifid Uterus. It consisted of a bifid uterus with a single cervix and two internal cervical orifices; but there was also found, attached to the cervix, a third uterine lobe forming a closed sac containing altered blood.

The majority of the malformations of the uterus and vagina can be attributed to defective processes of development in the caudal ends of the Muellerian ducts. The caudal ends of these ducts normally fuse to form a single medial tube which opens into the urogenital sinus and constitutes the anlage of the uterus and vagina. Any defect in this fusion obviously will result in some degree of duplicity of the uterus and vagina. Baily and Miller[3] describe the second degree of imperfection in the fusion as resulting in a partial division of the uterus into two horns—*bicornate uterus*. The wall between the two Muellerian ducts may remain patent in the entire portion of the uterine tract thus giving rise to a *bipartite uterus*. If the wall between the ducts remains intact throughout both uterine and vaginal portions, the result is a complete division of the uterovaginal tract—*uterus didelphys*. Occasionally the uterine portion of one Muellerian duct may fail to develop properly and becomes a solid cord resulting in a *unicornate uterus*.

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†For record and address of author see "This Week's Issue," page 1055.

The uterus bicornis also shows all the possible grades between the variety in which there are two horns, a double cervix and double vagina, and that in which the double character of the organ is indicated merely by a depression or notch at the fundus (uterus cordiformis). (The two horns may be equal in size or one may be much less developed than the other manifesting an approach to the type of uterus unicornis.) All these intermediate varieties of the bicornate uterus have been observed and described by Ballentyne[4], Pascheu[5], Thevard[6] and others. They have noted considerable variation in the separation of the horns. In the most marked cases they are widely separated and between them may be found a band or fold passing from the rectum to the bladder. In other cases a shallow depression at the fundus shows that fusion of the two Muellerian ducts has closely approached the degree found in the normal uterus. While both horns are found in most cases to lie exactly side by side, one may be directed forward indicating some degree of uterine torsion.

The cervix uteri may be broad and large and present a double orifice; or it may be large with only one os; or it may be normal in every respect. The vagina may be septate, subseptate or single, and the external genitals are, for the most part, normal. Other developmental defects are found occasionally as associated anomalies. It is not uncommon to find a septum dividing that part of the organ internally into two compartments which from its external contour appears single. In other cases one or both horns may be solid, semisolid or imperforate at one or several points. Behind such imperforate areas accumulation of blood may occur at puberty. (The cervix may show a double or single canal.) Chlorotic girls are so frequently found to be subjects of these anomalies that some writers, Ballentyne among them, have regarded chlorosis as a developmental morbid state. The menstrual functions present different forms of irregularity depending upon the physical character of the anomaly. When menstruation takes place from both cavities at different times, it occurs every two weeks. When it comes on from both cavities simultaneously, it is apparently normal. When one horn is imperforate, menstruation occurs once every two months. Dysmenorrhoea and amenorrhoea are often associated with bicornate uterus.

While an occasional patient is sterile the majority are fertile. Holländer's patient, for example, had seven labors, one of twins and

three abortions. Bicornate uterus should be suspected whenever menstruation takes place during pregnancy because a pregnancy may exist in one horn while a menstrual discharge appears regularly from the other. Pregnancy may occur in both horns simultaneously or at different dates. In rare cases twin pregnancies have occurred in one horn. The bicornate uterus may abort; or labor may occur at the full term when the empty horn may show contractions as well as the gravid one. When, as sometimes happens, the pregnant horn is shut off by a septum, gestation may become practically extrauterine subjecting the patient to all the hazards associated with rupture and hemorrhage. Even in cases where unilateral atresia does not exist rupture of one of the uterine horns may occur.

FIG. 1. Uterus Didelphis, in which the wall between the Müllerian ducts remains intact throughout, resulting in a double uterus, double cervix and double vagina.

FIG. 2. Bipartite Uterus. Failure of the Müllerian ducts to fuse at the uterine segments.

FIG. 3. Uterus Unicornis. The Müllerian duct fails to develop properly and becomes a solid cord.

(Lantern slides.)

A patient presenting this unusual form of accident during pregnancy was admitted to the hospital September 17, 1927. Mrs. B. T., (No. 16156,) age 33, had been married eight years during which time she had not been pregnant. There were no developmental abnormalities in her family as far as she knew. She began menstruating at the age of 12 years. Her catamenia were never regular ranging from five to eight weeks. During the first day of menstruation she had pain on the left side. On the second day the pain shifted to the right side. A period of amenorrhoea of four months' duration is associated with her present complaint.

There was nothing else of importance in her history until about 2 P. M. September 16, 1927, when illness came upon her with unusual severity. She described the attack as a wave of sickness coming on very suddenly while she was dusting floors. She was nauseated and vomited. Pain was severe and general over the abdomen and lower extremities. She went to bed at seven. Abdominal distress, soreness and intermittent pain continued throughout the night. In the morning she noticed blood stains on the bed linen. Doctor Storrs of Portsmouth was summoned. He sent her to the hospital immediately suggesting prompt interference for a ruptured extra-uterine pregnancy.

Upon examination she was found to be above normal weight and pale. Her pulse rate was 120 and readily compressible. The abdomen was distended, tense, dull in the flanks and tender over the lower half. The vagina was normal. The cervix was single, enlarged and soft. Rupture of an ectopic pregnancy was the obvious explanation of the clinical picture.

Two problems were presented for immediate decision: one, whether to operate immediately or wait; the other, when to do a transfusion—before, during or after operation. Under similar circumstances many authors advocate supportive treatment and waiting for the appearance and pulse of the patient to improve. This mode of action is based upon the hypothesis that if the blood pressure reaches a sufficiently low level, bleeding will be so slight that clotting will take place and result in complete cessation of the hemorrhage, thus serving to bridge the period of shock. Theoretically this line of reasoning appears logical and no doubt the waiting policy works safely in many instances, perhaps in the vast majority. However, I have seen a life lost while the attendants stood by and waited until the patient died from hemorrhage. If with accuracy, one can recognize that patient who will not die if not operated upon promptly, then he can temporize safely. Possessing very little confidence in our ability to discriminate without error we operate upon all cases of ectopic pregnancy expeditiously. It is our practice to transfuse the patient with fresh blood before operation if the pulse pressure is difficult to record. If the blood pressure is above 40 and below 60, preparations are made for blood transfusion during operation. The donor stands by ready for service during any exigency, but we prefer to have the transfusion given after ligation of the bleeding vessels.

In this instance the patient was operated upon without delay and a transfusion of 500 cc. of fresh blood was commenced during closure of the abdominal wound. We might have used the patient's blood, so much of which was free in the abdominal cavity, but our margin of safety was considered too small to attempt other than a routine method of transfusion.

When the abdomen was opened we found the peritoneal cavity well filled with blood. Leaving this as it was, the hand was passed into the pelvis with the expectation of delivering a ruptured tube. To state that I was met with a surprising disappointment is a mild expression of the reaction. A mass was encountered. It was as large as one would ex-

pect for a three or four months' pregnancy but its immobility was a disconcerting surprise. Not until the patient was put in the exaggerated Trendelenburg position and a direct visual examination made possible was the true picture revealed. Projecting from the upper mesial portion of a body with the texture of a uterus on the right side was a three and one-half months' foetus. In the left side of the pelvis was a similar body, much smaller and intact with its normal tube and ovary. The ruptured right half of the bicornate uterus was amputated at the cervix and removed with the foetus, tube and ovary. Recovery was uneventful.

Cases similar to this are rare in the literature. They must be considered as a possibility whenever the clinical picture of a ruptured ectopic

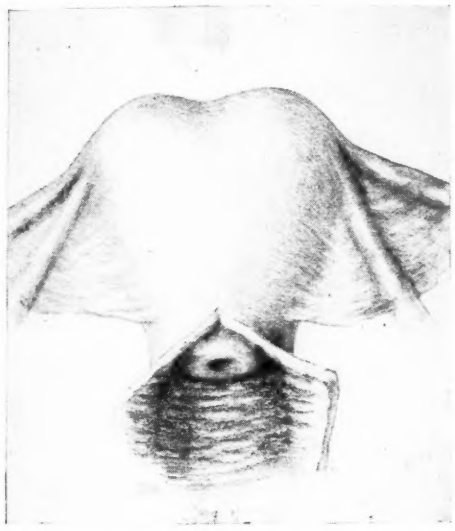

FIG. 4. Uterus cordiformis: Double character of the uterus is indicated only by a depression or notch at the fundus.

pregnancy occurs later than the second month, and whenever the mass which has formed about the site of the rupture is difficult or impossible of free mobilization. In a bicornate uterus of the type found in this case the condition may be unsuspected until pregnancy supervenes. Even then if labor is normal the anomaly is not likely to be discovered. W. Blair Bell[7] states that dysmenorrhoea does not occur among these individuals unless there is a state of underdevelopment in one of the two horns, a variation which may have been present in this case.

In a search of the literature I have found rupture of the gravid horn of a bicornate uterus unicollis to be an exceedingly rare accident. Benjamin F. Brugh[8] of Montgomery, West Virginia, in 1926 reported a case of uterus bicornis unicollis with rupture of a gravid horn at two and a half months' gestation. (The patient was white, aged 18 years and a primipara. Her last catamenia was January 27, 1926. On April 10th she suddenly developed nausea, vomiting and severe abdominal pain. She was admitted to the hospital April 11th with a diagnosis of ruptured ectopic pregnancy. Laparotomy revealed a true bicornate uterus. The left horn had ruptured and was badly shattered; the foetus and placenta were found in the peritoneal cavity.) In a search of the literature Brugh was unable to find statistical data as to the frequency of rupture of the pregnant horn of a bicornate uterus.

Humpstone[9] records two cases of pregnancy in the rudimentary horn of a bicornate uterus. In one the horn ruptured and in the other a dead foetus was removed by hysterotomy.

One other case was reported by Cuizza[10]. It consisted of a pelvic mass which at operation proved to be the formation of a lithopedion from the rupture of one horn of a bicornate uterus.

G. Balfour Marshall[11] has observed several cases of bicornate uterus in all of which pregnancy occurred in the right horn. He states that should the gravid horn be maldeveloped, rupture is the general rule. The seat of rupture is in the upper and median surface and the primary cause is the hystolytic action of the chorionic villi on the muscular wall which they invade.

In summing up therefore it has been found that:

Bicornate uterus in some degree is fairly common.

It may possess properties which lead to rupture during pregnancy.

Ordinarily it is observed as a curiosity with no practical significance.

This accident happens a month or two later than the average time of rupture of a tubal pregnancy.

It carries more risk because the haemorrhage is more massive and the source of bleeding not so readily determined during operation.

If bicornate uterus is not suspected, valuable time is inevitably lost in reaching the zone of the accident.

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Discussion

Dr. A. T. Jones: *Mr. President and Gentlemen*—As we review the literature of this subject, we find that there has been a great deal written in the past three or four years.

I am particularly interested in this subject that Dr. Truesdale has written upon today because I have run across a few cases, and two of those cases were sufficiently interesting to have been reported by me four years ago at the Cleveland meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

First we might speak of diagnosis. I think that most of these cases, are diagnosed by acci-

dent rather than deliberately. It is hard to make a diagnosis of bicornate uterus, or pregnancy in bicornate uterus in many of these cases. If one is able to differentiate a separate horn of the uterus, one may make the diagnosis before operation or before certain indications for operation appear.

One of my cases exhibited a bicornate uterus, a vaginal septum and double vagina and two cervices. In that case we saw it early and there was no question about the diagnosis. We allowed the patient to go to full term with the idea that we would do a Caesarean section, which was done successfully, getting a living child and saving the mother.

That was done following our first case in which we had operated presumably for a pelvic tumor. When we got in, we found that our tumor was the left horn of the uterus in which the patient had had a pregnancy, had lost her child, and some 4 weeks after delivery, her family doctor had found this large tumor. We operated and found that the tumor was the left horn of a bicornate uterus, which had not involuted and which had perforated at the fundus, the transverse colon being very firmly adherent fortunately closing the perforation and preventing any catastrophe. In that case we amputated one-half of the uterus, sewed it up and attached the round ligament to the remaining horn. Later I came in contact with the patient, found she had not been pregnant since, and she said, "Well, I don't dare to, do I?" I told her to get pregnant if she could and that I would do a Caesarean section. She proceeded to take my advice, became pregnant, and we did a Caesarean at term, delivering a nice, healthy, live baby, and saving the mother. We sewed up the uterus as you would following a Caesarean in a normal uterus, and she has not become pregnant since.

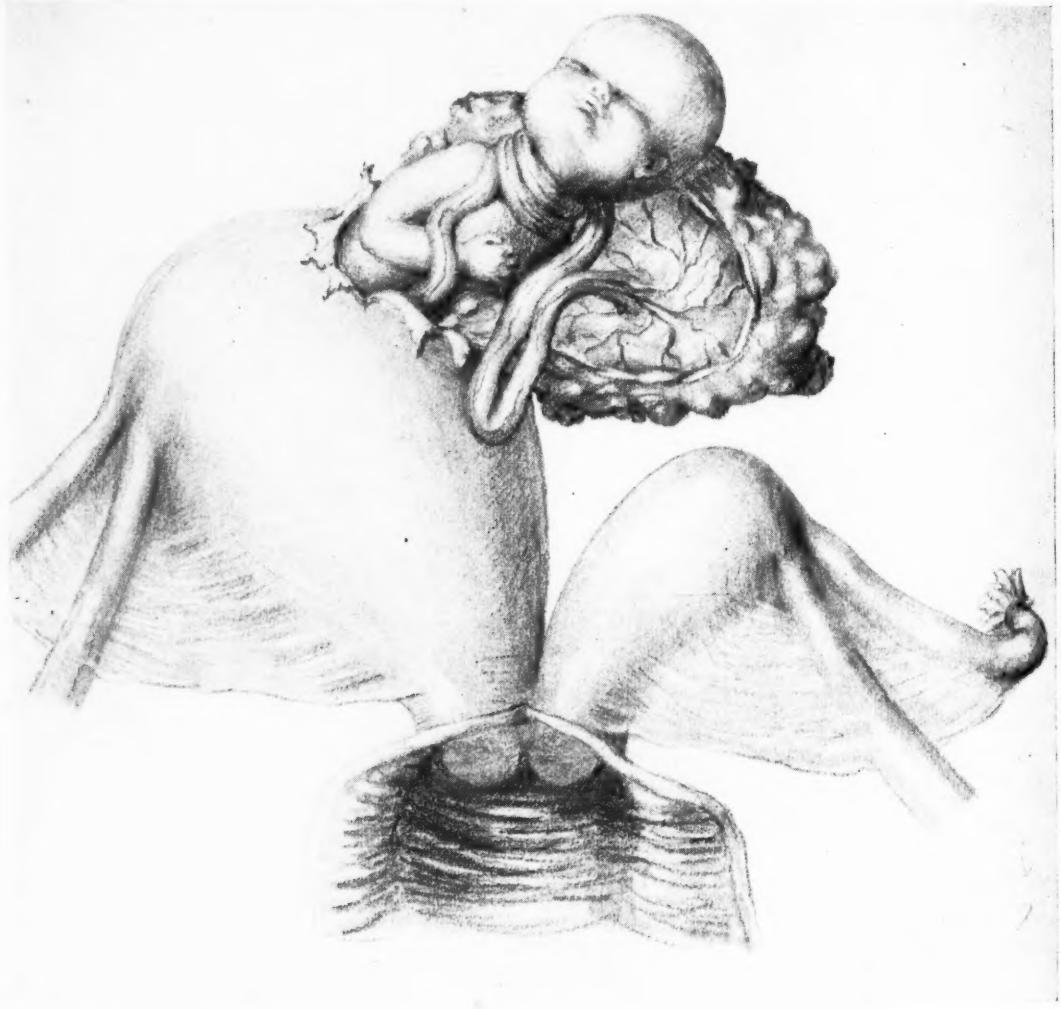

FIG. 5. Illustrates specimen as found at operation in case reported above. The foetus and placenta were projected through the uterine wall.

The other case, so far as I know, has not become pregnant.

A third case was that of a woman who had had a child at full term, the child being a Mongolian idiot. Following the birth of that child, she was

operated upon and we found a bicornate uterus. The accessory uterus, as Dr. Truesdale put it, was amputated, and following this operation she became pregnant and was delivered of a normal, healthy child. I speak of this case because many of these cases with this malformation are apt to have other abnormalities and they are apt to bring children into the world who show special anomalies and deformities.

I think the question I should ask is this: What should we do in these cases which have been pregnant or in which we do make a diagnosis of bicornate uterus? I believe that it would have been better judgment in my cases had we sterilized the women after their successful labors. I am extremely glad, however, that we didn't sterilize those two women before they had their children, because they each have a beautiful child and it has made their lives very happy. But from a surgical standpoint and for the good of the greatest number, I believe those cases should be sterilized. There is grave danger of rupture, of their not going to full term, and many of them have repeated abortions. If they have had a family or have been pregnant several times successfully, I believe that if we have occasion to open the abdomen we should sterilize the woman and not subject her to the danger of a subsequent pregnancy.

Dr. J. M. Birnie: I simply want to say that I had one case in which we knew beforehand that the woman had a bicornate uterus because she had been operated on for an appendix, and then quite a number of years later she was married and became pregnant. We watched her through her pregnancy with the thought that we would do a Caesarean when the time came. She went along to full term and we did a Caesarean and everything went along in a normal way, so far as I could see.

Dr. G. W. Brewster: I would like to ask Dr. Truesdale what the percentage of occurrence of this condition is in women?

Dr. Truesdale: In searching the literature, Brugh was unable to find statistical data as to the frequency of rupture of a pregnancy in a bicornate uterus. I find that in the literature reports of these cases are exceedingly few, indicating the rarity of the accident.

RECOMMENDATIONS RELATING TO THE PUBLIC HEALTH

Important recommendations for the promotion of the public health of the United States have been submitted to Congress by Surgeon General H. S. Cumming of the Public Health Service. These recommendations emphasize that the promotion and preservation of the public health from the economic as well as from other aspects is of great importance to the Nation. It is necessary, therefore, to recommend additional measures not only to prevent the spread of diseases, but to conduct studies relating to their origin and mode of dissemination. Studies of public health problems are becoming more and more difficult.

It is believed that a larger appropriation could profitably be expended in the furtherance and development of studies which are designed to promote the public health. The results of the scientific investigations in this field have given conclusive evidence that this is a worth while investment. It is felt that the recent progress made in connection with the important problem of cancer should be extended and developed. The public health aspects of cancer are becoming of increasing importance. Undulant fever in certain areas is of even more importance from the standpoint of public health than is typhoid fever. Studies relating to this disease should be carried out more intensively. Heart disease has been one of the leading causes of death in the United States for several years. It is felt that fundamental studies relating to the cause of this important condition should be undertaken by the Service. The preservation of the physical and mental efficiency of individuals is now regarded as an important part of public health work as well as the control of epidemics or the correction of environmental conditions.

Provision should be made for the extension of studies in stream pollution, in view of the increasing contamination of streams which must be used as water supplies, due to the growth of population and industries.

With the introduction of new processes in industry, additional problems relating to industrial hygiene are constantly arising. The extension of studies in this field is essential.

The Hygienic Laboratory of the Public Health Service should be enlarged and expanded in order to provide increased facilities to study the varied problems relating to public health. This is especially necessary for the prosecution of important chemical studies. The various branches of chemistry are becoming increasingly important as pertain to the public health.

The recommendation was made that a reasonable increase in the sums allotted to the scientific investigations conducted by the Public Health Service be made over an extended period of time, which would permit the economic expenditure of such an increase and allow time for the securing and training of skilled workers.

The venereal diseases continue to impose an enormous tax upon the vital and economic resources of the Nation. This is both an indirect tax in impaired physical efficiency and shortened life span, and a direct tax upon public treasuries for the care of the victims in dispensaries, hospitals, and eleemosynary institutions. The control of the venereal diseases, then is peculiarly a responsibility of government—Federal, State and local—and progress to this end will be made only as more adequate funds are made available to extend our knowledge of these diseases by systematic studies, and to give practical application to this knowledge.—*United States Public Health Service.*

TUBERCULOSIS REPORTING AND TUBERCULOSIS MORTALITY*

BY DAVID ZACKS, M.D.†

IT is trite to say that discovery of pulmonary tuberculosis early is of prime importance in order to effect a "cure" of some permanency. "If the doctor had only told me about my lungs a year earlier" says the patient: "if the patient had only consulted me a year earlier" says the physician. Neither the one nor the other can be said to be to blame; for the symptoms often do not appear until the process has advanced pathologically and the patient does not seek medical advice early. Then, too, the keenest ear may not detect the lesion in the lungs, and the help often obtained from an x-ray film is not always sought. Then it must be said, too, that what one considers an early case another considers really advanced. There is a theory abroad that the "cure" of tuberculosis should begin in the cradle. The effort of the National Tuberculosis Association through its Spring campaign to bridge this gap between the patient and the physician is altogether praiseworthy and its slogan this year is a much more cheerful one, namely "Early discovery—Early recovery".

In this short contribution I am presenting two tables which should prove of some interest now that we are thinking about tuberculosis. The reporting of tuberculosis began in Massachusetts in 1907. How much has reporting contributed towards the steady decline in the tuberculosis death rate? Table I shows an analysis

TABLE I

DEATHS FROM TUBERCULOSIS (ALL FORMS) REPORTED IN MASSACHUSETTS FOR 10 MONTHS IN 1928

2545 DEATHS

Not Reported	9.3%	
Reported after Death	18.0%	
Reported less than 1 month before Death	13.0%	
Reported 1 to 3 months before Death	8.2%	57.7%
Reported 3 to 6 months before Death	9.0%	
Reported 6 to 12 months before Death	9.5%	
Reported 1 to 2 years before Death	10.0%	
Reported 2 years or more before Death	21.4%	

of tuberculosis deaths for 10 months of 1928. There were 2545 deaths from all forms reported; this number does not include the November and December deaths. 18 per cent. were reported after death, 9.3 per cent. were never reported, 57.7 per cent. of the deaths occurred within one year of report. For this 58 per cent. the health departments could do no more than perhaps hospitalize at a great expense, and in most cases without much hope of recovery.

Table II shows the relative position of tuberculosis (all forms) among the first 10 causes of death. For all ages this position has changed from first place in 1902 and 1907 to sixth place in 1927. In the "under one year" age group tuberculosis has dropped from third place to eighth place. Some progress has occurred for the age group "one to four". In the age group "15 to 40" however tuberculosis is still the first cause of death, and has retained this position for the past twenty-five years. In the group "40 to 49" tuberculosis has held third place since 1922. Tuberculosis kills fewer and fewer in the age group "50 to 70".

TABLE II

RELATIVE POSITION OF TUBERCULOSIS AMONG THE FIRST TEN CAUSES OF DEATH

	1902	1907	1912	1917	1922	1927
All Ages	1	1	3	3	5	6
Under 1 year	3	3	5	7	8	8
1 to 4 years	4	4	3	5	4	3
5 " 9 "	2	5	4	3	5	6
10 " 14 "	1	1	3	2	3	3
15 " 19 "	1	1	1	1	1	1
20 " 29 "	1	1	1	1	1	1
30 " 39 "	1	1	1	1	1	1
40 " 49 "	1	1	1	1	3	3
50 " 59 "	3	4	6	6	6	6
60 " 69 "	6	6	8	8	9	10
70 plus	7	7	8	—	10	—
Total Deaths	47491	54234	52400	56628	51115	49324
Tuberculosis Deaths	6383	6596	5067	5409	3736	3203

SUMMARY

To those who are engaged primarily in the fight with tuberculosis the two tables presented should prove of some interest. Table I shows that either tuberculosis is not being found early or if found early is not being reported, for 58 per cent. of the deaths for 1928 occurred within the first year of report. Table II shows that the greatest success has been attained in the extreme age groups. The success in the "under one year old" group has no doubt been due to better milk supply, as the majority of deaths here were from extra-pulmonary tuberculosis, particularly abdominal. Another cause no doubt has been the ever increasing hospital program which enabled the removal of human contagion from the home. Fewer and fewer deaths from tuberculosis occurred in the age group "50 to 70" because the life span of tuberculosis is on the average less than 50 years. For the age group "15 to 40" tuberculosis is still the first cause of death, and has maintained this position for the past twenty-five years. It is to be noted, however, that some progress has been made in these ages also. In 1902 for age group "15

*From the Massachusetts Department of Public Health.

†For record and address of author see "This Week's Issue," page 1055.

to 19" tuberculosis caused 37 per cent. of all deaths whereas in 1927 this was 29 per cent., or a decline of 8 per cent. The decline from 1902 to 1927 in age group "20 to 29" was 5 per cent., for age group "30 to 40" 10 per cent., and for age group "40 to 49" 2 per cent.

REPORT OF A CASE OF CONGENITAL SINGLE KIDNEY WITH ASSOCIATED ABSENCE OF UTERUS AND VAGINA

BY EDWARD A. ADAMS, M.D.*

ON December 8, 1927 Miss E. D., aged thirty-eight, an operator in a cotton mill, went to bed feeling as well as usual. At about 12:00 P. M. she was awakened by a severe twitching of the left side of her face, arm, and body. She was unable to call or move, but the family was disturbed by her groaning and found her sitting up in bed gasping for breath.

The patient was seen about 1:00 A. M. At that time she was suffering acutely from shortness of breath, with cough and tracheal râles. Relief from the acute edema of the lungs followed shortly after the use of adrenalin. Physical examination then showed an abrasion of the tongue, fine moist râles at both bases, a systolic murmur at the apex, transmitted to the axilla, heart sounds of good quality and regular, slight edema over the tibiae, the knee jerks equal but very active, the temperature 98.2, pulse 100-120, blood pressure 200/80. No urine could be obtained at this time. The patient was very restless and apprehensive, fearing a return of the cramps in her left side. She complained of dryness of the mouth and throat and of soreness of the tongue. There was no headache.

At 2:00 A. M. there was a short attack of twitching of the muscles of the left side of face and left eye.

At 2:30 A. M. the patient vomited a large amount of greenish fluid and from then until morning slept very little, vomiting frequently.

At 8:00 A. M. she had a severe convulsion which lasted fifteen minutes. After this she became drowsy and respirations were slow and stertorous. She was taken to the Burbank Hospital shortly after the convulsion.

Soon after admission ten ounces of urine were obtained by catheter. Urine analysis: Pale, alkaline, specific gravity 1008; albumin: slight trace; sugar: none; sediment: many leucocytes and much amorphous material.

The patient remained drowsy throughout the day and vomited frequently. There was muscular twitching. Her condition remained about the same until December 11th, three days later, when she had several convulsions and died during the evening.

The family history was unimportant.

The past history was as foliows: She had always been well, had good habits, and had worked regularly up to and including the day before her illness. There was no history of previous diseases or illness, except food poisoning three years before, when she was sick a week. She had never been troubled with headaches. She had had nocturia two or three times for several years. She had never menstruated. She had been troubled for about a year with numbness of the left arm and fingers and frequently had cramps of the fingers and muscles of the left leg. During the previous two weeks she had noticed a slight shortness of breath in walking up hill or climbing stairs and had felt rather tired. She had also had considerable dryness of the mouth and throat for a year, and had taken a large amount of water daily. The previous year she gained several pounds.

Autopsy was done two hours post mortem and was productive of the following unusual findings: On the left side there was complete absence of the kidney and ureter with no evidence of remnant. The right kidney was very small, weighing 77 grams. It was very firm. The capsule was densely adherent and a cut section showed almost complete obliteration of the cortex. Unfortunately the specimen was lost before a microscopic section was made. The bladder was small with thick walls and showed only one ureteral orifice.

There was also a complete absence of uterus, tubes, and broad ligament and again no evidence of remnant. Both ovaries were present and appeared normal, lying in the iliac fossa at about the midportion of the lateral walls. The external genitalia were normal and there was a very thick septum at the vaginal orifice.

Other post mortem findings were: Acute fibrinous pericarditis, hypertrophy of heart (weight 465 grams), chronic endocarditis, mitral valve; moderate arteriosclerosis, passive congestion of lungs and liver, healed tuberculosis at apex of left lung, and a healed gastric ulcer at the pylorus.

In an article by Dr. MacKenzie and Dr. Hawthorne of Montreal,[1] a report of six cases and a review of the literature on this subject were made. The following observations have been noted:

1. Many patients with congenital absence of kidney also show some abnormality of the genital tract.
2. The sole kidney frequently becomes damaged by nephritis, calculus, or infection.
3. A greater than normal percentage die of kidney complaints.
4. A large percentage (42%) show advanced lesions of chronic nephritis.

It seems remarkable that in the case here reported there was no history of previous trouble and that the first warning of nephritis was a convulsion. The patient had always been considered a well person both by herself and her family. She had lived and worked, as had her sisters, and had carried a small life insurance policy. The absence of menses had been mentioned to her physician, but because of her apparent good health, this was considered unimportant.

*For record and address of author see "This Week's Issue," page 1055.

REFERENCE

1 Surgery, Gynecology and Obstetrics, 1928, Vol. XLVI, p. 42. "Unilateral Renal Aplasia," by David W. MacKenzie, M.D., and Allan B. Hawthorne, M.D.

MINIMUM STANDARDS FOR THE DIAGNOSIS, TREATMENT AND CONTROL OF SYPHILIS*

BY N. A. NELSON, M.D.†

FOREWORD

MANY physicians have asked for information similar to that contained in this outline. It is not intended to be a manual of treatment. It is presented to the medical profession in the hope that it will encourage the early diagnosis, adequate treatment and, for the sake of the public health, the control of syphilis.

The burden of the control of syphilis lies largely with the practicing physician for he sees the infectious case. The name and address of the co-öperative patient is not reported to the official health agency, and the physician, therefore, is the only individual who can control the disease from the standpoint of the public health.

The outline was prepared in consultation with a group of physicians who specialize in the treatment of syphilis and gonorrhea both in private and in clinic practice. It has been approved by the Committee on Public Health of the Massachusetts Medical Society.

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DIAGNOSIS

1. *Every genital sore regardless of its "insignificance", should lead you to suspect syphilis until you have proven it to be otherwise. It should be remembered also that extragenital sores which fail to heal often are syphilitic.*

2. "Varicose ulcers", other chronic ulcers, wounds which fail to heal, fractures which fail to unite, cardiovascular disease in the middle-aged, obscure rheumatism, chronic invalidism and many other conditions which resist treatment, frequently are syphilitic. In these cases, at least, do routine blood tests.

3. In every case of gonorrhea, the physician should have in mind the possibility of concurrent infection with syphilis, acquired at the same exposure. Since the incubation period in syphilis is a matter of weeks and the primary lesion may be missed, especially in women or in meatal and urethral chancre in the male, routine examination and final serological study should be made up to at least twelve weeks after exposure. Even then the patient should be warned to report any subsequent sore, rash, persistent headache or other symptom characteristic of luetic infection.

4. Since public and dispensary maternity practice has demonstrated an incidence of 8% to 10% positive blood-tests, *every pregnant woman should have serological examinations early in pregnancy.* Only through the universal adoption of such a procedure, can congenital syphilis be controlled at the source. If infection was acquired at or after the time of conception, the blood may not be positive for six weeks or more.

5. *Primary syphilis should be so diagnosed only when confirmed by darkfield findings or positive serology or confrontation (syphilis in the contact). The blood may be negative for three weeks or more after the chancre has appeared.*

6. Search should be made for the spirochete by darkfield in the examination of every genital lesion and suspicious extragenital sore because:—

   a. Positive blood may not be obtained for several weeks after the appearance of the primary lesion. Delay in diagnosis and consequently in treatment, is dangerous and unnecessary.

   b. Many sores which appear insignificant have proven to be chancres.

   c. Some sores which appear clinically to be chancres have proven to be otherwise.

   d. Chancroid may be combined chancroid and chancre. Identification of the Ducrey bacillus does not eliminate the possibility of associated spirochetal infection. The longer incubation period of chancre requires later examination of the sore for the spirochete. Every patient with chancroid should be kept under observation as indicated under gonorrhea.

*Prepared by the Massachusetts Department of Public Health co-öperating with the U. S. Public Health Service and approved by the Committee on Public Health of the Massachusetts Medical Society. These standards in reprint form will be distributed by the State Department of Public Health to the profession.

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e. Chancroid is relatively uncommon in this part of the country.

7. Secondary syphilis with rash, mucous patches or other typical secondary manifestations may be diagnosed as such for the purpose of instituting immediate treatment. Serologic examination must be made at the same time, however, to confirm the diagnosis and to make your medico-legal record complete. It should be positive in 100% of untreated cases in this stage so that in case of *repeated* negative serology, diagnosis should be reconsidered, granted that the serological examination has been made at a reliable laboratory.
8. A case in which history or serology give the only evidence of syphilis, should be so diagnosed only when several specimens of blood taken at least a week apart, are positive. Conversely, in the case of a suspicious history or of suggestive clinical evidence, *a single negative blood is not conclusive of freedom from syphilis.* Several serological studies and a spinal fluid examination must be made.
9. A complete diagnosis of syphilis cannot be be made in tertiary syphilis (especially neurosyphilis) or in late congenital syphilis, without lumbar puncture as well as blood tests, unless the clinical manifestations of tabes dorsalis, paresis or of tertiary skin lesions are unmistakable.
10. Lumbar puncture should be advised as an aid to diagnosis in all cases of late secondary, tertiary and late congenital or heredosyphilis, and in all cases of primary and early secondary syphilis when the first full course of treatment has been completed. *(Negative blood in late syphilis or in treated early syphilis is no guarantee of negative spinal fluid.)*
11. Avoid the risk to the patient of untreated or inadequately treated syphilis by using every available means to establish the diagnosis. Many patients lie intentionally; many unintentionally, because they do not know. Careful, painstaking, often-repeated questioning may be necessary. Do not be afraid to use the vernacular.
12. *Do not subject the patient to the mental shock of a diagnosis of syphilis and to months or years of treatment until your diagnosis is confirmed by every reasonable means.*

TREATMENT. GENERAL CONSIDERATIONS

1. Careful physical examination of every patient should precede treatment. Arsphenamine or one of its modifications is essential to the adequate treatment of syphilis, but its injudicious use may be dangerous. Cases complicated by nephritis, aneurysm, aortitis, myocarditis, pulmonary tuberculosis, diabetes, cerebral thrombosis, tabes dorsalis, paresis, or meningitis require great caution. Frequently, especially in the late forms of visceral syphilis, the patient must be prepared for arsphenamine by preliminary treatment with mercury, bismuth and iodides.
2. *All syphilis must be treated as a systemic infection from the beginning. The spirochetes have been found in the blood-stream within forty-eight hours after exposure.*
3. *Treatment of primary syphilis must not be begun until diagnosis is confirmed by darkfield examination or by serology or by confrontation (syphilis in the contact). Local treatment of the lesion with mercury must not be prescribed until the diagnosis is assured.* If local treatment with mercury already has been used, moist dressings (water or saline) or boric acid ointment for a day or two may facilitate finding the spirochete. *Systemic treatment may prevent later serological confirmation of the diagnosis, hence the importance of darkfield examination in primary syphilis before treatment is begun.*
4. Familiarize yourself with the reactions which indicate intolerance to and sometimes follow medication. Be prepared to meet emergencies and to interpret properly the signs which indicate caution. The chief reactions to the arsphenamines are: (1) idiosyncrasy to arsphenamine (nitritoid crisis), (2) therapeutic shock (Herxheimer reaction), (3) gastro-intestinal symptoms, (4) cutaneous reactions (usually a contraindication to further arsenical) which may lead to exfoliative dermatitis, (5) visual disturbances which may be warnings of impending optic atrophy. Many of them may be avoided and only in rare cases should any of them prevent the use of arsphenamine in doses compatible with the patient's tolerance. Mercury, and to less degree, bismuth, may cause systemic reaction, more commonly manifested as stomatitis and renal damage. Frequent routine urine examination is essential.

TREATMENT. SPECIFIC

1. No rigid plan of treatment can be applied to every patient. Obviously it is impossible, in this brief outline, to suggest the treatment for individual variations. It is possible only to point out the importance of careful diagnosis, persistent and adequate treatment and, in general, what the modern treatment of syphilis involves. If the practitioner takes the responsibility seriously, he will seek expert advice whenever a particular situation calls for it. Weight, age, general health, tolerance and the stage of the disease are some factors which may require individualization of treatment. Any

syphilologist will be glad to advise with you over the plan of treatment.

2. Arsphenamine, neoarsphenamine or sulpharsphenamine is of first importance in the treatment of primary, secondary and early congenital or heredo-syphilis, and after preparation of the patient with mercury or bismuth and iodides if indicated, in most late forms of syphilis.
3. *Arsphenamine and neoarsphenamine should be given intravenously. Sulpharsphenamine may be given either intravenously, intramuscularly, or subcutaneously.*
4. In primary and secondary syphilis, an average course of one of the arsphenamines consists of not less than ten injections. Infectious cases (those with skin or mucous membrane lesions) are given two or three doses a week for two to four weeks to render them non-infectious. The balance of the course is given in weekly injections. Doses vary to a maximum for average-weight adults of 0.4 gram of arsphenamine, 0.6 gram of sulpharsphenamine and 0.6 gram of neoarsphenamine. Usually it is advisable to begin with a dose as low as 0.1 gram to test the patient's tolerance, rapidly increasing until the maximum is reached or contraindications arise to indicate limited tolerance. Persistent intolerance to even small doses may require the substitution of the less active bismuth preparations. Some patients have greater tolerance for one form of arsphenamine than for another. *In late syphilis or in complicated cases the arsphenamines may be contraindicated, their use deferred or the dose modified.*
5. Bismuth preparations probably stand next to the arsphenamines in importance in the treatment of early syphilis and are of great value in the treatment of late syphilis. *Bismuth never should be substituted for the arsphenamines when the latter are indicated and tolerated.*
6. In primary and secondary syphilis, it is the rule in this country to follow each course of arsphenamine with a course of bismuth. It is given, always, intramuscularly. The dose varies with the type of preparation and an average course consists of not less than twelve doses given a week apart.
7. Mercury preparations may be used in place of bismuth. Some syphilologists substitute mercury for one-half the course of bismuth. Mercury may be given intramuscularly or by inunction. The average course of intramuscular injections consists of not less than ten or twelve doses a week apart. Inunctions are given to the number of six a week for five or ten weeks, using from four to six grams per dose. *Mercury alone, by mouth, is inadequate treatment in early syphilis or if there is any active process.* It may be given by mouth to advantage with arsphenamine; it is a slow resistance builder and valuable as a preparation for arsphenamine in cardiovascular cases and during the first two weeks of the insoluble intramuscular course while the injections are getting into action.
8. After a full course of arsphenamine and either bismuth or mercury, a vacation of from two to four weeks may be permitted, then a blood test is made to observe progress. The course is then repeated. Iodides may be given orally during the vacation. Never less than two courses of arsphenamine and bismuth or mercury should be given and usually more, regardless of negative serology.
9. *Iodides are not spirocheticides.* They help to remove and prevent the formation of granulomatous tissue. They are useful in preparing certain cases for arsphenamine, in specific headache, and as an interval medication. They may be contraindicated in tuberculosis.
10. If, after two or three courses of treatment, the serology continues positive and a spinal fluid examination has not been made, it is to be advised and consultation may be in order.
11. Tryparsamid is the most useful drug in the treatment of neurosyphilis. It compares favorably with malaria therapy which requires hospitalization. The ideal dose is 3.0 grams intravenously, once a week without vacations unless contraindications arise, which, however, are rare. Meningeal syphilis, gumma of the central nervous system and early tabes dorsalis and paresis often respond quickly and very favorably. Late (symptomatic) tabes and paresis often improve, but courses of 100 or more doses usually are required. Treatment may have to be repeated later. Visual disturbances may follow the use of tryparsamid and unless the drug is withdrawn, lead to optic atrophy. Therefore, although it is not essential, it is good practice to have competent eye examinations before giving tryparsamid and whenever indicated during treatment.
12. If the patient cannot pay for the treatment necessary, and the physician is reluctant to continue, treatment is available at the nearest clinic. Anything less than adequate treatment will jeopardize the patient's opportunity for a cure.
13. If complications or difficulties arise, the syphilitic patient is as much entitled to the benefits of expert consultation as in the case of difficult labor or any illness or injury which the physician does not feel competent to handle alone.

CURE

1. Serological examinations are not necessary after diagnosis is established until at least one full course of treatment is completed, or as a matter of record if the patient is to be transferred to another clinic or physician, or signifies his intention to discontinue treatment.
2. *The patient should be informed that subsequent examinations of the blood are for the observation of progress only, and that long treatment is necessary even in the event of negative serology. Too many patients believe that the first negative blood means cure.*
3. *No patient should be discharged as cured until a negative spinal fluid is obtained. Negative blood is no guarantee of negative spinal fluid.* The time to begin treatment of Central Nervous System Syphilis is before symptoms arise which mean permanent damage has been done.
4. Observation of a patient on whom treatment has been discontinued, should consist of serological and physical examination at frequent intervals, for at least five years. Spinal fluid examinations are essential in the observation of neurosyphilis and these as well as all tertiary cases will require periodic examinations for life.
5. Keep careful records of the history, examination, diagnosis, treatment, clinical progress and disposition of all cases of syphilis. Your observations may be of value to others and certainly will enable you to estimate the success of your own procedures and thus guide you in your treatment of other cases. They may be required in medico-legal cases.

THE PHYSICIAN'S RESPONSIBILITY TO THE COMMUNITY

1. The patient is your immediate problem but behind him there are others just as important.
2. The source of the patient's infection requires treatment to prevent infecting others. Persuade the patient to send the contact in for examination or to give you the name and address so that it may be reported to the Board of Health for investigation.
3. The mate of the patient may have become infected unless the patient was in the late, non-infectious stage when he or she married. A proper examination at least should be urged. Responsibility for later infection of the mate, potential congenital syphilis and infection of other contacts may be avoided by impressing the patient with the contagiousness of syphilis. Any patient whom you believe to be irresponsible or dangerous to the public health by reason of occupation or moral turpitude, may be quarantined through your local Board of Health.
4. The patient's children may have congenital syphilis, if the mother is syphilitic. They have a right to proper examination and treatment.
5. The patient who contemplates marriage should understand that so long as he is infectious or in danger of relapse there is danger of infecting the mate and children. Under the law, the physician may prevent such a marriage by divulging the information to the opposite party or his guardian.

A FEW FACTS

1. In the United States about 200,000 cases of syphilis are reported annually. Excepting measles, more syphilis is reported each year than any other reportable communicable disease, and none of these diseases except gonorrhea, is as incompletely reported as syphilis.
2. In 1926 the twenty-three states which reported tuberculosis reported 103,355 cases (all forms) and 127,128 cases of syphilis.
3. An average of 2400 cases of communicable syphilis have been reported annually in Massachusetts for the last ten years.
4. An average of 243 persons have been admitted to the hospitals for mental diseases of this state, for general paralysis of the insane, during each of the last ten years. Over 8% of all admissions to Massachusetts hospitals for mental diseases during the last ten years were due to general paralysis of the insane.
5. Death certificates indicate that about 500 persons die each year in this State from some recognized form of syphilis. These do not include the many deaths from visceral syphilis (especially cardiovascular) and central nervous system disease which never were diagnosed as syphilis. Osler was convinced that syphilis is the greatest killing disease.
6. Careful studies in many cities have shown that even where there are clinics, about 70% of those cases of venereal disease which are under treatment, are in the care of the private physician. In non-clinic cities, most of them are. Therefore the control of the spread of syphilis, its recognition in pregnancy as the source of congenital syphilis, the prevention of neurosyphilis and the reduction of mortality from syphilis is in your hands.
7. Syphilis is not a problem of morals; it is a disease. An appreciable percentage of syphilis is congenital (innocent); about 75% of syphilis in the female is in married women (largely innocent); about 5% or more is extragenital (largely innocent);

and more than 25% of all syphilis is in the group between 15 and 25 years of age,—youth who have had little or no proper sex instruction and no knowledge of the dangers of venereal disease,—the fault of society.

It has been stated in the "Foreword" that this is in no wise intended to be a Manual of Treatment. You are referred to the excellent texts which are available, for the many details of diagnosis and treatment which may be pertinent to a given case. Osler has said "Know syphilis in all its manifestations and relations and all other things clinical will be added unto you".

RESECTION OF THE SMALL INTESTINE ACCORDING TO THE TECHNIC OF MIKULICZ

Extraction of Large Foreign Body (Cream Bottle) From Rectum*

BY WILLIAM M. SHEDDEN, M.D.†

RESECTION of the colon by the Mikulicz technic is not uncommon today, but instances of its use on the small intestine are now so rare that they are worth reporting. It was first employed at the beginning of the 19th century on fecal fistulae resulting from gangrenous herniae, undoubtedly of the small intestine, and from gunshot wounds, which probably were many times of the small gut.

Ashurst, in 1889, recorded the development of the operation to which we now give the name of Mikulicz. For many years surgeons had been attempting to remove the spur or septum which separated the orifices of the two ends of the bowel lying side by side like the tubes of a double-barrelled gun. Dupuytren gave this spur the name "eperon". Schmalkalden, in 1798, recommended the passage of a ligature through the base of the eperon, upon which traction was to be made so as gradually to cut through the tissues.

In 1813, Dupuytren passed a seton through the base of a very prominent eperon, gradually increasing the size of the seton till the whole eperon was cut through, but in the case in which the experiment was tried, peritonitis ensued and the man died, so he abandoned this mode of treatment.

The destruction of the eperon by means of an enterotome was then attempted by Dupuytren. The instrument he devised consisted of three parts, viz., two branches which locked, and a screw whereby the handles could be approximated. He used this in forty-one operations, principally on the open ends of small intestine following fecal fistulae. In twenty-nine cases the patients were "completely and permanently cured" of their fistulae.

Blasius, Liotard, Delpech, Reybard, Gross and others have modified the Dupuytren enterotome. Hermann, as others before him, pointed out the advisability of screwing it up gradually.

Mikulicz, in his *System of Practical Surgery*, written in collaboration with Bergmann and Bruns, remarks that Dupuytren's method of closing an artificial anus was the only one practiced in pre-antiseptic days. He states that it rests on the principle of changing an artificial anus into a fecal fistula by necrosing pressure on the spur, and then closing it by separating the intestine from the anterior abdominal wall to such an extent that normal portions of intestine can be sutured without tension. Mikulicz' technic of closing the fistula after the spur had been destroyed was as follows: He made an incision 0.1 to 0.2 inches away from the border of the bowel opening, occasionally passing a finger into the lumen of the bowel as a guide. He carried his dissection into the peritoneal cavity, whereas today we feel that it is only necessary to carry it to the peritoneum. His next step was to freshen the edges of the fistula till he reached normal intestinal wall. Finally he closed the fistula with two layers of intestinal sutures.

Mikulicz found numerous defects in Duputren's instrument and devised what he called a kentrotribe. This was a clamp similar to that of Dupuytren, but with teeth and with an elastic band placed around the handle.

Mikulicz' contribution to the technic that bears his name was therefore: The popularizing of the extra-peritoneal resection of the intestine. This he did by improving Dupuytren's technic and also by perfecting the final closure of the fecal fistula by the suture. I cannot find that Dupuytren sutured his fistulae, and he states, moreover, that it took two to six months to cure his patients from the time he first applied the clamp, so that undoubtedly no sutures were used.

In 1890, thirty-eight years ago, Oscar Bloch of Copenhagen first did an extraperitoneal resection of the sigmoid (i.e. the first stage of the operation to which has now been given the name of Mikulicz). Bloch attempted primary extraperitoneal suture of the two ends of the exposed gut, but the sutures did not hold. One hundred fourteen days later he mobilized the gut, did an end to end suture, and replaced the intestine in the abdominal cavity. Mikulicz states that he does not know whether Bloch

*From the Surgical Services Massachusetts General Hospital.
†For record and address of author see "This Week's Issue," page 1055.

went further in his technic than this. I cannot find that he did.

In his clinic at Breslau Mikulicz operated on one hundred and six cases of malignant intestinal tumors in the course of eleven years. Twenty-one of these were subjected to a simple resection and primary suture, with a mortality of 42.9%. Sixteen were operated on by the "Mikulicz technic" with a mortality of 12.5%. Of the two cases that died after the Mikulicz operation, one had metastatic carcinoma appearing six weeks later and the other died of peritonitis following perforation of a descending colon infiltrated with carcinoma.

Mikulicz was in the habit of freeing the intestinal tumor, with the affected lymph glands and corresponding mesentery, from all connections, as in the simple resection, so that finally it was attached only to the afferent and efferent gut. At the completion of his operation he bound a thick glass tube into the afferent gut and to this attached a large rubber tube.

Paul, of Liverpool, modified the operation by leaving the proximal end of the colon about 7.5 cm. long, in which a tube was fastened to conduct the contents to a container.

The Mikulicz operation as employed today consists primarily in delivering the involved loop out of the abdominal wound, a maneuver which presupposes considerable mobility. If the loop is not quite mobile, it must be well mobilized, for it is not being returned to the abdomen. This procedure is employed only in cases in which the involved loop of bowel has a mesentery. A V-shaped incision is made in the mesentery in such a way that the blood supply of the proximal and distal loops is maintained. The afferent and efferent loops are sutured together by means of Lembert sutures over a distance of about 10 cm. The parietal peritoneum is sutured to the base of the two protruding loops. At a second stage, after twenty-four to forty-eight hours or longer, the two loops are divided some distance above the skin as a double-barrelled tube. After about two weeks, a crushing clamp is used, one jaw entering the efferent loop and the other the afferent one. The clamp is then gradually tightened and left in place over a period of days until the intervening wall between the two loops has sloughed away. This produces a continuous channel between the two loops. After a few days, the walls of the loops are mobilized and are closed over, thus re-establishing the lumen. This technic is especially applicable in those cases in which the loop is freely movable, and in individuals whose condition is not good.

Many surgeons have adopted the Mikulicz operation because of its diminished mortality rate. However, the reports published in the literature indicate that it is only used in a moderate portion of cases, where it might be considered suitable. The small intestine presents elements which favor one-stage resection and anastomosis in almost all instances. The disadvantages of the two-stage operation on small intestine are:

(1) That inanition results from too much leakage. (This objection was overcome in our case by emptying the drainage from the proximal loop immediately into the distal loop.)

(2) That skin irritation or even skin digestion follows the leakage of fluid. (This was combated in our case by applying suction to the proximal loop and by keeping the skin properly cleaned all the time and protected by applying liquid rubber, and ointments, etc.)

(3) That the reflex disturbance from fixation is greater from the small than from the large intestine. Hence, the two-stage operation, such as we have described in our case, is only applicable to small intestine in special emergencies,—for instance, strangulated hernia with gangrene of the intestine and spreading infection of the adjacent tissues.

(4) Fixation of the gut to the abdominal wall perhaps might favor intestinal obstruction.

The procedure has been much used on large intestine in the intervening years. Mayo states that the adoption of the Mikulicz method has probably done more to extend operability and reduce mortality in resections in the second half of the colon than any other factor. By adopting this method, in a large proportion of the operations he resected the left half of the colon, including the splenic flexure, but not including the rectum, 184 times, with a mortality rate of 17%.

Hartwell states that his collected cases show a mortality three times greater in the one-stage than in the many-stage procedure. Careful study indicates that the failures in the one-stage operation would have been avoided by the other mode of attack. These failures arose almost entirely from leakage somewhere along a suture line, with a resultant peritonitis or improperly drained abscess.

REPORT OF CASE

On September tenth, a Russian chauffeur was brought to the Emergency Ward of the Massachusetts General Hospital. He stated that about an hour and a half before admission, he had pushed a half pint milk bottle into his rectum with the open end upward. Becoming terrified at being unable to remove it, he called a doctor, who tried for sometime to remove it but without success. A second physician was then summoned. He noticed blood oozing from the patient's anus and said he felt intestine protruding into the bottle. He sent him at once to the Massachusetts General Hospital.

Physical examination showed a well developed and nourished man of thirty-six, complaining of continuous low abdominal pain. His abdomen was rigid and the lower half was quite tender. His pulse was 130, his temperature 100 and his respirations 20. There was an ooze of blood from the anus and upon rectal examination the bottom of the bottle was palpable just inside the sphincter. His physical examination was otherwise negative.

It seemed wise to attempt removal of the bottle

from below before doing a laparotomy. Under ether anaesthesia, therefore, with gentle pressure from above and gentle traction from below this was accomplished, but almost immediately afterwards, a small loop of intestine was noticed protruding from the anus. The abdomen was opened at once and was found to be full of blood, but no gross feces could be

Bottle extracted from patient's rectum. Size noted in centimeters. Note relative size of cork stopper to left.

seen in the pelvis. A tear could be felt at the lower end of the mesentery of the small intestine for an area of about 6 cm., and this was seen to be the source of the hemorrhage. After the bleeding points were clamped and tied, the gut was packed back and then it could be seen that there was a rent in the rectum on the anterior wall at about the level of the middle of the sacrum.

The rectal laceration was closed in two layers, turning the edges of the wound into the lumen of the gut, and following this the first stage of a Mikulicz operation was done, pulling the loop of small intestine which was supplied by the injured mesentery into the wound of the anterior abdominal wall, and suturing the wall about it in layers, after inserting a cigarette wick into the posterior part of the pelvis.

According to the above technic, the gangrenous loop was excised the day following the laparotomy. Twenty-four hours later a rubber tube was inserted in the proximal loop of the bowel. It was noted four days after the operation that the patient was draining a brownish watery material from the proximal loop at the rate of about three ounces every hour. This was a tremendous loss of fluid, and it was therefore decided to collect this fluid and insert it at the same rate into a tube in the distal loop. Ten days after the operation the skin had become irritated and red, so zinc oxide was applied. It was difficult to keep the tube in, as the intestine was quite friable. Soft solid diet was too thick to pass easily through the tube, so the patient was put on a lighter diet.

On the thirteenth day a crushing clamp was applied, according to the above mentioned Mikulicz technic. A suction tube was inserted in the proximal loop to keep the intestinal contents from the abdominal wall. This tube worked well and kept the abdomen fairly dry.

On September twenty-seventh, four days after the clamp had been closed down, it came away, having completely destroyed the spur. There was a good communication between the two loops and the patient was quite comfortable.

On October second, five days after the destruction of the spur, it was noticed that the intestinal discharge was much less; after another five days the second stage of the Mikulicz was done i. e., the closure of the stoma in the small gut. This was completed under local anaesthesia. The edges of the fistula were freshened and turned into the lumen in two layers. The following night the abdomen became a little distended and the patient complained of cramp-like abdominal pain. The next afternoon his condition was satisfactory, however. There was no vomiting. The patient was passing gas by rectum, there was practically no distention, and there was no evidence of leakage from the sutured fistula.

On October seventh, the granulating wound was strapped. There were no symptoms and his temperature was flat. Three days later there was a good fecal return from an enema and the patient was put on soft solid diet.

On October twentieth, forty days after entrance, the patient was discharged to the out-patient department with his wound healed.

On November third, he returned, stating that he had slight abdominal pain and nausea. He was kept in the ward twenty-four hours, but as his symptoms promptly disappeared, he was discharged, and was asked to report if this occurred again. He has not reported to us since.

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*Thanks are due to Mr. Robert Fleming for his translation of the German article by Mikulicz, and to Mr. Ahee Neilsen for his translation from the Danish of the article by Bloch.

PROGRESS IN PUBLIC HEALTH AND MEDICINE DURING 1928

BY HARRY H. MOORE, PH.D.*

MANY human beings suffered and died during 1928 from diseases which might have been prevented, innumerable remedial defects remained unremedied, and a host of persons with curable diseases remained uncured. "We know how to do a lot of things," says William H. Welch, "which we don't do, or do on a wretchedly small scale." There are evidences that the people in 1928 became more conscious of this manifestation of cultural lag than ever

*For record and address of author see "This Week's Issue," page 1055.

before; moreover, there was definite progress during the year toward the more effective utilization of modern science, both in the cure and in the prevention of disease.

The important changes during the year may be looked for under the following topics: mortality and morbidity statistics, public health measures, private practice, hospitals and clinics, legal measures, biological research, and research in medical sociology and economics.

MORTALITY AND MORBIDITY STATISTICS

A recently computed provisional death-rate for 1928 (based on a population of 37,600,000) was 12.3 per thousand, somewhat higher than the rate for the same population in 1927, which was 11.8. The rate for 91 per cent. of the population for 1927 (virtually the final rate) was 11.4, the lowest yet reached in the United States.

The infant mortality rate has shown for several years a downward trend, and while the figure for 1928 was not available at this writing, it was announced during the year that the 1927 rate had reached the lowest point in the history of the United States—65 deaths per thousand live births for the registration area, as compared with 73 in 1926.

The outstanding achievement of the year among the eighteen million policyholders of the Metropolitan Life Insurance Company was a further decline in mortality from tuberculosis, the 1928 death-rate for this disease in all of its forms being 90 per hundred thousand. On the other hand, the National Tuberculosis Association states that the decline of this death-rate during recent years "is showing a tendency to lessen." The Metropolitan Company reports that five other diseases, all of major public health importance—typhoid fever, scarlet fever, diphtheria, diarrhea complaints, and puerperal conditions—showed lower death-rates among policyholders in 1928 than ever before. Of unfavorable developments for the year among Metropolitan policyholders, the foremost was an increase in the death-rate from heart affections to almost the highest figure recorded; the cancer situation continued to grow definitely worse; and for a fourth consecutive year the diabetes death-rate rose. While, since the introduction of insulin, the rate for this last disease among males under forty-five has gone down, and while the rate among males between forty-five and sixty-five has remained almost stationary, after sixty-five there has been a distinct and significant rise.

The birth registration area was enlarged by the admittance, for the first time, of the states of Colorado, Georgia, and Oklahoma. The state of South Carolina was readmitted to the birth registration, and the state of Georgia to the death registration area.

While the United States Public Health Service and other agencies have continued their efforts to develop morbidity statistics, it is still difficult to secure reliable figures on the incidence and prevalence of various diseases. Two influenza epidemics, however, may be recorded, one early in the year and one beginning in November. From forty-one states having a population of almost 84,000,000, there were reported to the Public Health Service more than 805,000 cases of this disease. The smallpox record of the United States remains a disgrace. While this disease might be virtually wiped out, there were reported during the year from forty-two states, more than 34,500 cases.

PUBLIC HEALTH MEASURES

While there remain among official health departments of the United States a lack of trained personnel and an inadequacy of funds, there were significant forward steps during the year. Following the emergency work done in 1927 by the Public Health Service, the Rockefeller Foundation, and the state departments of health in the extensive area flooded by the Mississippi River, there were established eighty-seven new county departments of health, with one or more whole-time officers in charge. All of these were maintained through 1928.

On the part of local health departments, there was a definite effort, according to the American Public Health Association, to win the participation of private practitioners in preventive measures, such as the immunization of children against diphtheria, and this effort appears to have met with some success.

In Washington, the Parker Bill, providing for a more efficient Public Health Service, was passed by both houses of Congress, but was vetoed by President Coolidge. A bill introduced by Senator Ransdell, providing for the enlargement of the Hygienic Laboratory, failed to pass. These two measures, however, stimulated much discussion regarding the importance of the work of the Public Health Service and won the Service many friends. Congress appropriated $9,000,000 for replacing worn-out marine hospitals, but refused to make available an appropriation of $75,000 for a special program in cancer research recommended by a committee of eminent scientists.

In the field of mental hygiene, the most significant development of 1928 was the creation of the American Foundation for Mental Hygiene, Incorporated. Its chief aim is to secure a large fund for various types of work in the field of mental hygiene, at home and abroad, and to administer the fund in the interest of the movement as a whole. The closing weeks of 1928 were employed in the completion of initial plans for the First International Congress on Mental Hygiene, to be held in Washington in May, 1930. Several of the states extended their facilities for mental hygiene work. There continues to be, however, a scarcity of adequate personnel for child guidance and other types of mental hygiene clinics.

In the field of venereal disease control and social hygiene, approximately 324,000 cases of venereal diseases were reported to state departments of health, during the year ending June, 1928—a decrease of about 40,000 cases since 1927. There was an increase from 425 to 451 in the number of clinics reporting. The reduction in the number of cases may or may not have been partially due to a decreasing degree of care on the part of physicians reporting. Under the leadership of the American Social Hygiene Association, there was created a committee for research on syphilis with adequate funds to launch an important program of laboratory and clinical studies. Progress was made in the development of sound sex instruction. Parent-teacher associations and religious organizations entered into active participation in this and other fields of social hygiene work.

For the support of the Gorgas Memorial Laboratory in Panama, organized to study tropical preventive medicine, Congress provided an annual appropriation of $50,000. The Republic of Panama has donated the site and has pledged one-half million dollars for the construction of the laboratory.

The private foundations, including the Carnegie Corporation, the Commonwealth Fund, the plans for the First International Congress on Foundation, the Russell Sage Foundation, and the Twentieth Century Fund, continued to make possible pioneer efforts of immeasurable value in the control of disease by providing grants to both public and private enterprises. Details from annual reports are not available because of the early preparation of the present article. In addition, the Julius Rosenwald Fund adopted during 1928 a plan for providing for the establishment of hospitals and clinics, especially for persons of moderate means.

Reports were received early in the year of a dinner attended by several hundred physicians, sanitarians, and social workers in commemoration of the achievements in disease prevention of Lee K. Frankel. Thus, public service was recognized and a useful citizen honored while alive and active among his associates.

The president of the American Child Health Association, in November, 1928, was elected president of the United States.

PRIVATE PRACTICE

While private practitioners, especially surgeons and other specialists, continued to perform miracles in the diagnosis and cure of many disorders hitherto fatal, search through medical journals fails to reveal any significant efforts in the establishment of better organization. While specialization is increasing, private medicine in general remains unorganized.

There was an increase in 1928 in the number of physicians in continental United States, a total of 152,000 being reported in the 1929 *American Medical Directory* as compared with 149,500 in the 1927 issue. The number of medical school graduates in 1928 was 4,262, a larger number than in 1927 or in any year since about 1910 when there were more medical colleges than at present.

Approximately 20,000 persons were graduated from nursing schools in 1928 as compared with 17,500 in 1926. The number of dentists in the United States in 1928 was 67,334, while three years earlier there were only 64,716.

HOSPITALS AND CLINICS

While a number of new hospitals were opened in 1928, probably the largest institution throwing open its doors was the Columbia-Presbyterian Medical Center, with several units completed. There was also created, during the year, the Joint Administrative Board of the New York Hospital and Cornell Medical College Association, which has plans for the establishment in New York of another large medical center. Among various other developments during 1928 was the rising cost of hospital care and the increasing demand for lower-priced service.

There were 6,852 hospitals in the country in 1928, with 892,934 beds, an increase of 45 hospitals and 39,616 beds over 1927. Figures also indicate that a growing proportion of hospitals provided themselves with x-ray departments, clinical laboratories, and physical therapy departments.

Clinics have probably increased in number, but no survey was made during the year to show the extent of the growth. In 1927 there were more than 5,700. There has been a notable recent tendency among venereal, cardiac, and prenatal clinics to associate themselves with hospitals, either by transferring an existing clinic to the out-patient department of a hospital, or by inducing a hospital to establish such services in its out-patient department when not previously found in the community.

The Thomas Thompson Trust announced the inauguration, during the year, of two plans for sickness insurance. These provide, in consideration of small payments of cash, benefits to meet the expenses of hospital service in excess of certain minimums.

LEGAL MEASURES

While the legislatures of most states did not hold sessions during 1928, and therefore few state laws were passed important to public health and medicine, there were during the year several legal decisions of moment. The principle that a municipality is liable for damages if it permits its water supply to be contaminated was established by a series of court decisions. The Harrison Narcotic Act was upheld in April, 1928, by a decision of the United States Supreme Court. A world-wide quinine monopoly was permanently enjoined in September, 1928,

against the further violation of the anti-trust laws by a decision of the Federal District Court in New York.

BIOLOGICAL RESEARCH

Joseph Goldberger, of the United States Public Health Service, completed in 1928 reports on his notable work in the study of pellagra, and late in the year was attacked by cancer (a rare form) which subsequently resulted in his death. Goldberger gave himself freely to science. He once contracted yellow fever in connection with his experiments. A few years later he fell a victim to typhus fever. He was also attacked by dengue fever. Undaunted by these experiences, he responded promptly to a summons to work on pellagra, and discovered the cause of a malady which had brought disability and death to thousands of persons in the United States. Few men of our time, states the editor of a Washington newspaper, have been ushered by death into a more secure immortality than Joseph Goldberger.

Hideyo Noguchi, of the Rockefeller Institute, died of yellow fever, a martyr to his researches on that disease, leaving work which may show later that the malady has two forms.

E. V. Hardy, of the Public Health Service, showed that probably undulant fever, generally known as Malta fever, is of frequent occurrence in rural districts and is responsible for many sicknesses frequently diagnosed as grippe, typhoid fever, or tuberculosis. R. R. Spencer and R. R. Parker, of the Public Health Service, demonstrated that a vaccine developed by them is highly effective in the prevention of Rocky Mountain spotted fever. Oliver Kamm, of Detroit, announced that the important beta hormone produced by the posterior-pituitary gland, which controls the water deposits of the body, may be made artificially from animal glands.

The Nobel Prize in medicine for 1928 was awarded to Charles Nicolle, of the Pasteur Institute at Tunis, in recognition of his researches on typhus fever. The Nobel Prize for chemistry was given to Adolph Windaus, of Goettingen, Germany, for his part in experiments proving that ultra-violet light will activate ergosterol and confer on it antirachitic properties. The gold medal of the American Medical Association was awarded to Edward Francis, of the Public Health Service, for his work on tularemia, the committee on awards believing that his contribution in this field constituted the most important medical work of the year, judged on the basis of originality.

RESEARCH IN MEDICAL SOCIOLOGY AND ECONOMICS

Three commissions or committees, previously created, issued reports of significance during the year. In addition, there was published a report by the Advisory Committee on Burial Survey. The latter report showed that the undertaking business in the United States has been badly disorganized. Undertakers are having a difficult time in making a reasonable income, and funeral costs often are excessively high. Largely as a result of this study, presumably, the funeral directors of the country have organized the Funeral Service Bureau of America to improve the organization and ethics of the business.

The Commission on Medical Education during 1928 issued two reports. They showed that while medical education has been held responsible by some persons for many of the inadequacies of medical service, great progress has been made because of the higher standards of medical schools and of boards of licensure. The second of these reports presents principles which the Commission believes should be emphasized in medical training.

A report of the Committee on the Grading of Nursing Schools, entitled *Nurses, Patients, and Pocketbooks,* contains valuable data on the sociology and economics of nursing. Its chief conclusion is that there are more nurses being graduated than can secure employment at existing rates.

The Committee on the Cost of Medical Care issued in February, 1928, its five-year program of studies. The number on the committee was increased to forty-two persons, including private practitioners, sanitarians, economists, and representatives of the public, and a research staff of six was organized. Some six or eight studies have been inaugurated. The various researches are to be carried on with the co-öperation of the American Medical Association, the American Dental Association, the National Drug Trade Conference, the Metropolitan Life Insurance Company, the United States Public Health Service, and other agencies.

The more effective utilization of the benefits of modern science and the more efficient functioning of public health agencies, hospitals, clinics, and private practitioners of various kinds await the development of social research, experimentation, and demonstration. If the organizations responsible for these developments do their work well, the health and happiness of the people of the United States may be immeasurably improved.

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15201

DIARRHEA AND PAIN IN THE RIGHT FOOT

MEDICAL AND SURGICAL DEPARTMENTS

A married American woman forty-seven years old entered April 30 complaining of intermittent diarrhea of four months' duration and pain in the right foot and leg for a week.

Five months before admission she had an attack of grippe. She stayed in bed a week, then felt well until the end of the month. Then she had an attack of diarrhea lasting a day with some fever and cramp-like generalized abdominal pains. After this she had constipation for four days, the pains continuing. She strained a good deal at stool and developed hemorrhoids. She took laxatives until her bowels began to move. Her physician gave her some medicine which seemed to keep her bowels regular. The pains persisted for two weeks. During that time she stayed in bed. After this attack she had six or seven similar ones, each a little longer and more severe than the last, always accompanied by the pains and followed by constipation. She had not however been forced to go to bed since the first attack until the last one. The stools had been soft, but otherwise normal. February 28 she was examined at the Consultation Clinic of this hospital. Vaginal examination was negative. The urine was negative. There were some small hemorrhoids. Proctoscopic examination showed a pale, slightly granular mucosa but no ulcerations. The whole right side of the abdomen showed tenderness. Fluoroscopic examination with a barium enema showed that the whole colon filled normally. The tip of the cecum was displaced toward the midline and overlay a loop of the sigmoid from which it could not be separated. The colon seemed somewhat limited in motion. Chest examination showed the diaphragm in the normal position. The lungs were clear. A diet was advised which the patient did not follow. Four weeks before her admission to the hospital the last attack of diarrhea began suddenly. Her bowels moved three or four times a day at first, then one day moved fifteen times. The condition, including the usual cramp-like pains, became gradually worse. For two weeks she had had attacks of nausea without relation to eating and had vomited several times. For a week she had had difficulty with micturition. Then she began to have severe dull aching pain in her right knee radiating down the leg to the foot and most severe in the great toe. The leg and foot became cold and tingled. This condition became gradually more severe. Pills given by her physician relieved the pain, diarrhea and cramps. Her bowels had not moved for four days before admission. Three days before admission she found the foot was becoming purplish, especially in the region of the great toe. The color gradually deepened. She had been in bed for four weeks. During this attack and the previous ones she had had fever, 101° to 102°. She thought she had gained about two pounds since the onset of the illness.

One brother died of tuberculosis. The patient was not exposed.

She had always been well and strong except for an attack of influenza twelve years before admission. She was in bed for two weeks. She had had one miscarriage following a fall. Her bowels had been slightly constipated for years.

The patient was having such severe pain in the leg and foot that the history was left unfinished.

Clinical examination showed a fairly well developed and nourished woman lying in bed groaning. Skin hot, dry, very coarse. Hair dry. Marked pyorrhea. Tongue showed a wavy brownish white coat. Boggy submental glands. Abdomen distended but rather soft, tympanitic. No dullness in the flanks (?) palpation difficult. No organs or masses felt. Liver dullness at the fourth rib anteriorly. Vaginal examination showed creamy discharge; tenderness in the left lower quadrant on bimanual palpation. Rectal examination moderately painful; nothing was felt. Right ankle cool, foot cold and tender. On the right great toe was a circumscribed deep purple area, tender, not swollen. On the heel was a similar patch. No dorsalis pedis pulsation was felt. Pupils contracted (morphia); reactions normal. Knee jerks normal.

Before operation urine normal in amount, specific gravity 1.008 to 1.012, a few leukocytes and rare red blood corpuscles at two of three sediment examinations, 50 to 60 leukocytes per field at a fourth. (No catheter specimen.) Blood before operation: 19,000 to 9,000 leukocytes, 84 per cent polymorphonuclears, hemoglobin 75 per cent, reds 5,350,000, slight achromia. Two Hintons negative. Stools: guaiac negative at six examinations.

Before operation temperature 99° to 103.5° with two drops to 97° and 97.6° May 9 and 11.

At X-ray examination the arteries of the right leg were not visible. The bones showed no definite variation from the normal. The lung fields were clear. The diaphragm was rather high on both sides. The heart shadow was not

remarkable,—possibly a little prominent in the region of the left ventricle.

With enemas the distention became less and the bowels began to move normally. The patient continued to have considerable pain in the right foot. May 19 the right leg was amputated at midthigh under spinal novol. Pathologic examination of the popliteal, anterior tibial and dorsalis pedis arteries showed thickening of the intima and an increase of fibrous tissue in the media; no calcification.

May 24 the patient vomited. Four days later she was still vomiting, had a chill and very poor pulse, and looked quite ill.

May 29 a second operation was done.

June 9 there was some sloughing of the fascia from the leg wound. Two days later there was more separation and more sloughing. There was only occasional vomiting.

June 12 Alpine lamp treatment was started. The separation and sloughing increased. A large decubitus developed over the sacrum. The patient became irrational. She took little by mouth.

June 17 she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

They are looking hard for evidence of intestinal obstruction or intestinal ulceration, but they are not finding it, and my guess is that they went on to physical examination somewhat baffled.

We do not yet know how many examinations of the urine there were, or whether these figures constitute any limitation in the swing of gravity.

Summary:—Here is a gangrene, I suppose arteriosclerotic in origin, although the woman is young for it, with no embolic source indicated in the rest of the body. We shall have to speculate later about the abdominal symptoms.

The second operation was I assume on the same leg, but I do not know.

DIFFERENTIAL DIAGNOSIS

The striking thing about the patient in the first place is that she is so young. Forty-seven is young for a gangrene which we must, so far as I see, call arteriosclerotic. With the same symptoms occurring at seventy-seven or sixty-seven we should say, "Of course, that is what we expect". But at forty-seven it is unusual. Nevertheless I do not see evidence for any other cause.

What about the abdominal symptoms? Naturally, with a proved vascular trouble in the leg one speculates as to whether there is a similar vascular trouble in the abdominal arteries. We know something about cerebral arteriosclerosis, something about cardiac arteriosclerosis, something about arteriosclerosis in the extremities. We have never, so far as I know, been able to construct a satisfactory clinical picture of abdominal arteriosclerosis. And yet the pathologists often point out to us cases in which there is more extensive arteriosclerosis in the abdominal vessels than anywhere else. It seems if there ought to be a well outlined clinical picture of abdominal arteriosclerosis, but I think it still has to be said that there is not. I have seen quite a number of cases, and read of others, with about as much as this and about as little, in which extensive changes were found in the abdominal arteries. I do not know any better reason for her alternating diarrhea and constipation.

Outside the abdomen, on which I have committed myself, and the extremities which we are told about in the pathological examination, have we anything else to think of in this case? I should like to know first if anything more is known about the urine. We have two low records of specific gravity. Out of how many total examinations were those two?

Miss Painter: Those were two out of four before operation. After the operation there were two more with specific gravity 1.014 to 1.018.

Dr. Cabot: So we have a swing of 1.008 to 1.018 in the examinations recorded,—no restriction of importance.

Miss Painter: At one of the two post-operative examinations the sediment was loaded with leukocytes.

Dr. Cabot: Was there any albumin at any examination?

Miss Painter: A trace on June 1st.

The second operation was not on the leg.

Dr. Cabot: Then I suppose it was on the abdomen. I have nowhere else to suggest. Nothing else is mentioned.

A Student: Was there some adhesion around the cecum?

Dr. Cabot: That is suggested by the X-ray. I think I should have paid more attention to the fact that the cecum seemed to be hitched up to the sigmoid.

PRE-OPERATIVE DIAGNOSIS

Abdominal malignancy.

SECOND OPERATION, MAY 29

Under local novocain a left rectus incision was made. The peritoneum was found to be half an inch thick. It was opened with some difficulty. Every portion of the viscera that could be exposed was studded with myriads of small white opaque areas which had more the appearance of tuberculosis than of carcinoma. There was very little fluid. Some of the adhesions were indurated. Some sections were obtained for pathologic examination. The wound was then closed.

PATHOLOGIC REPORT

A fragment of fat from the abdominal cavity showing on microscopic examination the histologic structure of caseous tuberculosis.

FURTHER DISCUSSION

DR. CABOT: Tuberculous peritonitis—I did not in the least suspect that. I do not know now how much it had to do with the death. I judge they did nothing about it at the operation. There was nothing particular to do. Abdominal tuberculosis does not ordinarily give rise either to diarrhea or to intestinal obstruction. One makes the diagnosis when there is ascites or when there are palpable masses, and not otherwise. We did not have any of those, so I do not think we could have been expected to make it.

What are we to anticipate postmortem aside from the arteriosclerosis which we know exists at the periphery and may assume exists elsewhere? I have no means of prophesying anything else. Of course it is a good guess that she had a bronchopneumonia, but there is no basis for that except her general condition and the commonness of bronchopneumonia near death.

A STUDENT: Do you think the degree of arteriosclerosis was enough so that the gangrene should have been predicted by X-ray?

DR. CABOT: I do not know enough about X-ray to answer. But of course if you had seen the arteries by X-ray that would not have been enough to make one predict gangrene. We often see the arteries by X-ray in people who never develop gangrene.

A STUDENT: Is arteriosclerosis often as painful as this?

DR. CABOT: Yes. When it gets near the point of blocking I have seen very severe pain several times.

A STUDENT: How about Buerger's disease?

DR. CABOT: I do not see any evidence of that because we have nothing in the other foot and because the case is not a chronic one. Unilateral disease is not common; and she is not of the race in which that ordinarily comes.

A STUDENT: Could she have had diabetes?

DR. CABOT: I assume there was no sugar in the urine. I think it would have been mentioned.

A STUDENT: What caused the creamy discharge?

DR. CABOT: I do not know. Ordinarily we say endocervicitis, but the pathologists do not always find much for that.

A STUDENT: Do you think there is enough evidence of pyelitis?

DR. CABOT: No, because we never had a catheter specimen. We know there was a vaginal discharge. So I do not think we can say that the pus in the urine is significant.

A STUDENT: What are the chances that it was a neoplasm of the small intestine with a diarrhea?

DR. CABOT: I do not know what surgeon was there, but I should think, with surgeons of the type we expect were there, the chances of neoplasm were poor if they had a good look and did not see it.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Tuberculosis of peritoneum.
Gangrene of right leg and foot.

DR. RICHARD C. CABOT'S DIAGNOSIS

Arteriosclerosis.
Bronchopneumonia?

ANATOMIC DIAGNOSES

1. *Primary disease.*
   Tuberculous peritonitis.
   Tuberculous salpingitis.

2. *Secondary or terminal lesions.*
   Pulmonary embolism.
   Bronchopneumonia.
   Thrombosis of right iliac artery and vein.

3. *Historic landmarks.*
   Amputation of right leg.

DR. TRACY B. MALLORY: The post mortem findings, I am afraid, will do very little to explain the clinical picture. We found a considerable amount that was not forecasted clinically, and no explanation for many of her symptoms.

She had a very extensive tuberculous peritonitis of the dry, adhesive type. This apparently arose from a tuberculosis of the Fallopian tubes, one of the common sources of tuberculous peritonitis in women. There was a chronic endometritis which may possibly have been tuberculous, although the histologic picture was not entirely characteristic. She did have a slight terminal bronchopneumonia. It was not tuberculous. There was not much tuberculosis in the lungs and none of it progressive. There were no intestinal ulcerations, no evidences of tuberculosis within the gut.

The iliac artery and vein on the side of the gangrenous leg were both completely thrombosed. The degree of arteriosclerosis at this point was very slight. A portion of the thrombus in the iliac vein had broken loose, and the final event, not suggested at all in the history, was a huge pulmonary embolus completely blocking both branches of the pulmonary artery.

I think there is no doubt that the gangrene of the right leg was due to the thrombosis of the iliac artery, but why that occurred I have no idea. There was no evidence of involvement of the wall of the artery by any tuberculous glands, and the degree of arteriosclerosis seemed quite insufficient to explain it.

DR. CABOT: Was there anything in the case to suggest syphilis?

DR. MALLORY: Nothing.

A STUDENT: What would the vessels in the leg indicate?

DR. MALLORY: It sounds like a moderate degree of arteriosclerosis, but it does not sound to me like enough to cause gangrene.

A STUDENT: What would you find in Buerger's disease?

DR. MALLORY: You find extremely marked changes in the intima of the vessels, that is an organizing thrombus with a great deal of endothelial proliferation. It is quite a characteristic picture, quite slow in onset, whereas this was a very sudden thing. I think that can be definitely ruled out.

A STUDENT: What was cementing the cecum and sigmoid together?

DR. MALLORY: The generalized adhesions. This type of tuberculosis gives the most extraordinarily dense and all-inclusive adhesions of any kind of pathology that occurs in the abdomen. It is often almost impossible to separate them even post mortem.

A STUDENT: Were these adhesions sufficient to have been palpable?

DR. MALLORY: There were no masses, nothing but minute tubercles, which cannot be felt through the abdominal wall.

A STUDENT: Was the coil not matted together?

DR. MALLORY: One would not feel anything unless there were fecal masses in the gut.

DR. CABOT: It seems to me a very interesting case. In acute cases we often find blocked arteries causing gangrene, the block due in the first place to arteriosclerosis with or without diabetes, and secondly to embolism. This clearly was not either, and there is no third that is recognized clinically in acute cases. It seems to me very important that we should remember this case as stretching our ideas about peripheral gangrene. Of course Buerger's disease and syphilis with syphilitic changes in the arteries are the other things that come into our minds, but those can be ruled out. There is a great deal to say about peripheral thromboses. Sometimes they are multiple and wholly venous, and sometimes do not lead to gangrene or infection and finally clear up.

CASE 15202

OBSCURE ABDOMINAL PATHOLOGY FOLLOWING TRAUMA

SURGICAL DEPARTMENT

A boy four years of age was brought to the Emergency Ward in the early afternoon. The history was as follows. Two days previously he was taken to another hospital in an ambulance after being knocked down by a truck which was said to have passed over him. There were no reliable witnesses of the accident. The parents were summoned and straightway took the boy home with them. Although he complained of some abdominal pain at the time, apparently he was not considered to have been much injured by the accident. He was taken by his parents to a doctor's office, where X-rays of several bones revealed no fractures. The following day he was kept in bed, and had no appetite, taking only orange juice. He had some difficulty in urinating on the first day, but not on the second. The color of the urine was not observed. He vomited several times during the second day and once on the morning of admission. A stool resulting from an enema given at three o'clock the morning of admission showed no abnormality. During the morning the boy's abdominal discomfort increased somewhat, and he was therefore brought to this hospital, the parents considering him sicker than on the preceding day.

Upon admission an examination disclosed the following points. There were no contusions or abrasions visible on the body. The boy appeared flushed and evidently in discomfort. The tonsils were reddened, but no exudate was seen. The chest was negative except for some roughness of breathing presumably transmitted from the throat. The abdomen was moderately distended. Tenderness was general, but more marked in the right lower quadrant. On percussion there was tympany over the whole abdomen, but to palpation there was a lack of elasticity very suggestive of the presence of some fluid. No shifting dullness was observed. There was no real rigidity anywhere, the spasm being largely voluntary. Urinalysis revealed no albumin, and there was no blood or pus in the sediment. Specific gravity 1.030. No sugar. Leukocyte count 14,200. Temperature 101°. Pulse 140. Respirations 35. Otherwise the physical examination was negative.

DISCUSSION

BY E. PARKER HAYDEN, M.D.

The first problem in this case is properly to evaluate the history in relation to the physical findings. Although the boy was said to have been run over by an auto truck, he nevertheless showed no external injuries. There was no sign of bony injury. The urine was definitely negative, and a bowel movement was said by the parents to be normal. Abdominal tenderness was noted by the parents on the day of injury, and this had increased. The child had vomited several times. He had a fever, and a pulse and respiratory rate increased somewhat out of proportion to the temperature for a child of his age. The natural excitement of strange surroundings, however, were thought sufficient to account for

this. Although abdominal tenderness was general it was definitely more marked in the right lower quadrant. The abdomen was distended and had a feeling of fullness and a suggestion of some fluid, but not the firm rigidity commonly though not always present in peritonitis. From the history and from these findings we were led to consider as possibilities the following conditions:

1. Acute appendicitis with beginning peritonitis.
2. Contusion of a hollow viscus with subsequent perforation and peritonitis.
3. Rupture of a solid viscus with some intraperitoneal hemorrhage.

The abdomen did not feel so tense nor did the child seem so sick as one would expect if peritonitis were developing. The leukocyte count was lower than is usual in peritonitis, and likewise the temperature, but here again one sees exceptions from time to time. On the other hand the boy's body showed no evidence of any surface injury such as it would seem must be present in some degree if a truck wheel had passed over him only forty-eight hours before.

Exploratory operation was decided upon and done, using novocain locally and supplementing this with gas-oxygen for the exploration. A lower lateral right rectus muscle retracting incision was made. Upon opening the peritoneum considerable serosanguineous fluid gushed forth. This was seen to have accumulated largely in the pelvis. No clots were seen. The appendix was negative. The lateral surface of the ascending colon and mesocolon was edematous and contused for a distance of three to four inches and the peritoneum was torn for a distance of about an inch and a half. There was no perforation. On the transverse mesocolon, upper surface, was seen another contusion about an inch and a half by one inch in size which appeared to be covered with fibrin. Inspection of the right lobe of the liver revealed no sign of injury. The right kidney was negative to palpation. It was possible by elevating the abdominal wall to look well over toward the left side of the abdomen and well into the pelvis, but no further evidence of trauma was seen. The abdomen was then closed without drainage.

The boy made an uneventful convalescence, leaving the hospital two weeks after admission. He was seen again a week later and appeared well in every way.

It seems certain that a truck wheel passed over the child's abdomen, probably going from right to left, putting the ascending colon and mesocolon on stretch until the peritoneum tore. That he had no more serious injury and no external contusions can probably be best explained on the supposition that it was an empty light weight truck with soft pneumatic tires. I feel quite certain that the only intra-abdominal injuries were those which I saw and have described, for I should have expected to find blood clots if the liver had been ruptured at a point beyond the scope of my vision. Children react with considerable increase in temperature, pulse, respirations and leukocyte count to conditions which in an adult would produce little if any reaction. In this instance, apparently, the contusions and the subsequent peritoneal irritation of serosanguineous fluid, slight though it was, nevertheless was sufficient to produce the picture.

In view of the findings at operation it seems probable that the child would have recovered without exploration, though I do feel that his recovery was probably made more comfortable by evacuation of the fluid which was present in considerable amount.

The case is chiefly of interest, however, as an instance of the general truth that in all cases of obscure abdominal pathology with history of previous injury it is best judgment to explore and to explore early rather than delay until peritonitis or hemorrhage have advanced. Ill advised conservatism may sacrifice a life that might have been saved by timely intervention.

DIAGNOSIS

Contusions and abrasions of colon and mesocolon with peritoneal effusion.

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VENEREAL DISEASE AS A PUBLIC HEALTH PROBLEM

THE benefits derived by humanity from that branch of medicine which deals with matters of public health have contributed in no small measure to the state of comfort and well-being in which civilized communities now find themselves. The venereal diseases, however, still fling their challenge in the face of mankind—a challenge which has as yet aroused but little response. Approximately a million persons in the United States are constantly under medical care on account of syphilis or gonorrhoea. There is, it is true, a quiet but determined movement under way to meet this situation, but it is being carried on almost entirely by the Federal and State Public Health Services, with very little support from the public and the medical profession.

The efforts of the Federal Public Health Service have been hampered by the small amount of money appropriated for this purpose. $70,000 per annum will not go very far when divided among field studies, laboratory research and clinical investigations. Massachusetts, aside from providing free Arsphenamine, subsidizes thirty-three venereal disease clinics throughout the State; not only by financial support but by instruction given by one of the members of the department and by the counsel of a committee of consultants the State Department of Health endeavors to improve the quality of work done in these clinics. This policy would appear to be logical as well as practical; it must tend to divert the venereal practise of the smaller towns into the hands of one or two men who are qualified to treat venereal disease. One difficulty with the present situation is that so many cases are treated by physicians who have neither interest in nor training for the treatment of gonorrhoea and syphilis. Intensive field studies carried out under the direction of the United States Public Health Service show that more than one-half of all physicians are constantly treating one or more cases of syphilis or gonorrhoea. Proper management of these cases requires equipment and experience which every doctor does not possess. It is frequently noted by competent venereologists that many of their cases come to them only after months of entirely inadequate treatment by other doctors. In men, massage of the prostate, so necessary in most cases of gonococcus infection, is neglected or improperly carried out; in women, the rather trying task of eradicating the infection from the various glands clustered about the introitus and the urethra has not even been attempted. In syphilitics the neglect of lumbar puncture as one of the means of determining whether the disease is cured may result in the development, years later, of tabes dorsalis.

Public Health Service investigations show that in a group of cities studied the rate of cases of venereal disease under treatment was 12.5 per thousand inhabitants, in contrast to a rate of 2.5 per thousand in rural communities. It is perhaps fortunate that venereal disease is less frequent in rural districts than in cities, for in the latter the patient can always find (if he knows where to look) the skill and equipment necessary for his case. It is significant that in a population of 12,000,000, less than 30% of those with venereal disease are being cared for by clinics. Over 70% are in the hands of private physicians.

One important aspect of this venereal disease question, therefore, has to do with the ability of the patient to secure adequate treatment. It is doubtful whether the large majority of physicians have had training which qualifies them to manage venereal disease properly; it is unlikely that, in the hours devoted to study and to post graduate instruction, they spend any time in acquiring such training unless they plan to go into venerology as a specialty. We do not favor the diversion of these cases of venereal disease to public clinics unless their financial status makes this necessary; both for economic and for medical reasons we believe they should go to private physicians. The solution of the question would seem to lie in the training of certain phy-

sicians in the management of venereal disease in the smaller medical centers. This is what the system of State clinics aims to do.

This is but one phase of a very complicated and baffling situation. The solution would be easy enough if cases could be kept under control until they were no longer infectious, and if the sources of contagion could be identified and themselves be brought under quarantine. Our inability to bring about these admittedly impracticable conditions makes the venereal disease question the tremendous problem that it is.

AN IMPORTANT PROBLEM BEFORE THE MEDICAL PROFESSION

It is almost trite to repeat the statement that the practice of medicine is undergoing important changes. Those who are watching the ebb and flow of the emotions of physicians recognize the uncertainties in the minds of students of medico-social affairs with respect to the future status of the private doctor. Not the least of the irritating influences at work may be found in the substantial interest which is being shown in these matters by individual philanthropists and certain organized groups. The underlying motives in attempts to bring medicine and the people together although believed to be benevolent schemes by these organizations may be dangerous experiments unless guided by sane minds. Successful business men sometimes seem to feel that medicine needs the directing and controlling influences of financiers. It may be and probably is true that doctors are not as a class able to devise means and methods whereby medicine may be made to meet all the needs of the people and hence are led to accept the domination of so called big business in the management of hospitals, clinics and in many other philanthropic fields.

In Chicago a peculiar situation exists. An eminent and well qualified surgeon, a professor in a medical college of repute, has been expelled from the Chicago Medical Society because he was associated with a clinic which advertises and (according to statements published in an editorial in the *American Medical Association Journal*) does not publish statistics or other evidences of the work done by it. The coroner of Cook County, who was formerly Health Commissioner of Chicago, has resigned from the same medical society as a protest against the treatment accorded to his friend. The facts seem to be that the Illinois Social Hygiene League, of which the disciplined doctor is reported to be the president, received $12,000 yearly for treating charity patients of the Public Health Institute Venereal Disease Clinic. It is claimed that this clinic was established to meet the need for scientific treatment of venereal diseases. It is generally conceded, we have been told, that this arrangement has met conditions among the class of patients which otherwise would not have received adequate attention.

The fact that the expelled doctor maintained connection with an organization which advertised its service has been under consideration for some time by the Chicago Medical Society. Whether the doctor profited by his relation to the clinic or league is uncertain; by some it is believed that certain cases were referred to him thereby providing private patients from whom his income was augmented; others feel that no important revenue was derived from this practice. This, however, is only one feature of the complicated affair. The society sent a committee to the doctor with the hope that a conference would bring about a satisfactory readjustment of the doctor's attitude. This effort proved to be futile and the council of the Chicago Medical Society expelled the doctor. It is reported that an appeal from the decision of the Council will be attempted and it may be that the dispute will eventually be carried through the State Society to the Judicial Council of the American Medical Association.

Dr. Schmidt has been indorsed publicly by Dr. Charles H. Mayo as a man and a surgeon but without the expression of approval or otherwise of Dr. Schmidt's attitude.

The Chicago *Tribune* takes occasion to criticise the ethics of the American Medical Association in so far as this controversy seems to have shown that the approved standards of behavior of physicians may interfere with ready and efficient service to the people. It is quite evident that a considerable proportion of the laity cannot be brought to understand the reasons for approved rules of conduct by physicians. This Chicago controversy may lead to more distrust of the ethics of medicine than already exists. This would be unfortunate for there has seemed to have been a growing confidence in scientific medicine and endorsement of physicians as a result of various publicity programs. If this public endorsement is withdrawn it will weaken that structure of confidence which is of vital importance in the application of medicine to the needs of humanity.

Unless the whole subject can be handled with diplomacy of the highest order it is loaded with trouble. Theoretically medicine must throw off all shackles of entangling alliances. It must establish and maintain its standards but not in the trades union spirit. The matter is up for serious consideration and flippant or sarcastic language is out of place. The wishes and needs of the people must be recognized and used as texts for further adjustment of the best methods of medical approach to these problems.

The non-conformist in medicine may be intelligent and skillful in the practice of his art and may not be beyond reformation if approached by friends in whom he has confidence. This resource may have been exhausted in this case and there may be many under surface rea-

sons which have led to misunderstanding and disagreement which we, at this distance, do not know.

It is in order to hope that some peaceful adjustment may be adopted, for action of this sort by a medical society will be seized upon by many as an illustration of the inability of organized medicine to meet certain definite problems.

At no previous time in the history of the world has scientific medicine been favored with so many large contributions designed to encourage the study and treatment of disease. It will be a great misfortune if the publicity of this Chicago controversy tends to bring about less interest in and endorsement of the medical profession. If this controversy could have been kept from publicity it is probable that some amicable solution could have been reached. With the ambition to outlaw recourse to drastic measures among nations let the medical profession set an example and employ diplomacy to the last possible moment and be governed by the principle of subservience to the will of the majority after thorough discussion of any subject pertaining to ethics.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

FITZ, REGINALD. A.B., M.D. Harvard, 1909. Associate Professor in Medicine, Harvard Medical School. Visiting Physician to Peter Bent Brigham Hospital. His subject is: "The Diagnosis of Lobar Pneumonia." Page 1015. Address: 721 Huntington Avenue, Boston.

MEIGS, JOE V. A.B., M.D. Harvard, 1919. F.A.C.S. Surgeon to Out-Patient Department, Massachusetts General Hospital and Palmer Memorial Hospital. Surgical Assistant, Collis P. Huntington Hospital. Surgeon, Pondville Hospital at Norfolk and Vincent Memorial Hospital. Visiting Consulting Surgeon, Burbank Hospital, Fitchburg. His subject is: "Endometriosis; the Occurrence of Endometriomata in the Abdominal Wall. Four Cases Following Operations in the Female Pelvis." Page 1020. Address: 264 Beacon Street, Boston.

TRUESDALE, PHILEMON E. M.D. Harvard Medical School, 1898. F.A.C.S. Chief of the Earle P. Charlton Surgery, Fall River, Massachusetts. Fellow of the American Surgical Association and a member of the New England Surgical Society. His subject is: "Rupture of a Pregnant Horn of a Bicornate Uterus." Page 1031. Address: 151 Rock Street, Fall River, Mass.

ZACKS, DAVID. M.D. Tufts, 1920. Assistant Director Division of Tuberculosis. His subject is: "Tuberculosis Reporting and Tuberculosis Mortality." Page 1036. Address: Division of Tuberculosis, Room 6, State House, Boston, Mass.

ADAMS, EDWARD A. M.D. Tufts College Medical School, 1917. Assistant Physician, Burbank Hospital, Fitchburg. His subject is: "Report of a Case of Congenital Single Kidney with Associated Absence of Uterus and Vagina." Page 1037. Address: 20 Prichard Street, Fitchburg, Mass.

NELSON, N. A. B.S., M.D. Long Island College Hospital, Brooklyn, N. Y., 1926. Formerly Chief Chemist, American Water Works and Electric Company, Northern Division. Health Officer, Long Branch and Red Bank, New Jersey. Superintendent, Cincinnati Anti-tuberculosis League. Captain, Field Secretary, Tuberculosis Commission to Italy, in charge in Sicily, American Red Cross. Executive Secretary, Tuberculosis Committee, Brooklyn, Bureau of Charities, Brooklyn. Now Epidemiologist in charge of Venereal Disease Control, Massachusetts Department of Public Health. His subject is: "Minimum Standards for the Diagnosis, Treatment, and Control of Syphilis." Page 1038. Address: Department of Public Health, 546 State House, Boston.

SHEDDEN, WILLIAM M. A.B., M.D. Harvard, 1920. Surgeon to Outpatients, Huntington Hospital. Assistant Surgeon to Outpatients, Massachusetts General Hospital. Assistant in Anatomy, Harvard Medical School. Assistant in Surgery, Tufts Medical School. Consulting Surgeon, Massachusetts Eye and Ear Infirmary. His subject is: "Resection of the Small Intestine According to the Technic of Mikulicz. Extraction of Large Foreign Body (Cream Bottle) from Rectum." Page 1042. Address: 270 Commonwealth Avenue, Boston.

MOORE, HARRY H. A.B., A.M., Ph.D. Formerly Secretary Oregon Social Hygiene Society and Civilian Committee for Combating Venereal Diseases, Council of National Defense. Director of Educational Activities, Division of Venereal Diseases, United States Public Health Service. Public Health Economist, United States Public Health Service. Now Director of Study, Committee on the Cost of Medical Care. His subject is: "Progress in Public Health and Medicine During 1928." Page 1044. Address: 910 Seventeenth Street, N. W., Washington, D. C.

MISCELLANY

TRANSPORTATION TO AND FROM THE PORTLAND MEETING OF THE AMERICAN MEDICAL ASSOCIATION

Numerous trips to the Portland Meeting of the American Medical Association are being planned.

Last week the JOURNAL outlined the trip planned for the Medical Societies of New England. The

party will leave Boston on the afternoon of July 4 and will return by Puget Sound and the Canadian Rockies, arriving in Boston at noon on July 20. Those desiring to visit Yellowstone Park will leave on the morning of June 29 and join the other members of the party in Montana.

The New York trip is planned to go by way of Glacier Park and to return by Yellowstone and Estes Parks.

The Golfers' special trip is planned to go by Denver, Salt Lake, and San Francisco and to return by Glacier Park.

Doubtless other trips will be arranged for special parties. The fares are alike for all as the low summer rates are in effect.

One thing, however, is important. Those intending to attend the meetings should make up their minds which party they wish to join and make application at once. Those desiring to associate with the New England group are urged to write at once to the Headquarters of the Massachusetts Medical Society, 126 Massachusetts Avenue, Boston, for the reservations desired or for information.

THE DIRECTORY, INC.

The past month was one of the most successful in the history of the Directory, Inc. (For Mothers' Milk), located at 270 Commonwealth Avenue, according to the report just issued by that organization; $2500 was the amount of money collected during April.

The Boston City Hospital, during the past month, has used more mothers' milk than any other institution, $843.90 being spent by the hospital for this purpose. Dr. Martin J. English of the City Hospital in a communication to the Directory thoroughly endorses the work and states that "The Directory, Inc., should have the support, encouragement, and co-öperation of our entire community in their very excellent and very serviceable work and that it has lowered infant mortality 50%."

Other hospitals which endorse the work of The Directory by continually using their valuable product are: The Infants' and Children's Hospital, Massachusetts General, North Shore Babies' Hospital, Cambridge City Hospital, Cambridge Hospital, New England Baptist Hospital, and Faulkner Hospital.

The plans of The Directory, Inc., for the coming year include the perfecting of the dry-milk process; to take it out of the experimental stage. Funds are now needed to do this necessary work.

THE APPEAL OF DR. DUGDALE

Dr. Frederick Dugdale, whose registration was revoked because of evidence which the board construed as showing unprofessional conduct in the treatment of a case, has appealed to the supreme court to vacate the sentence of the Board of Registration in Medicine.

Dr. Dugdale has been using the Koch alleged cancer cure and has been under the scrutiny of the board for some time.

Eight women and two men testified before the court that they have been cured by the treatment given by Dr. Dugdale. Dr. Koch came on from Detroit where he has his establishment and testified for Dr. Dugdale. His alleged testimony as published in the Boston Herald is, if he has been correctly reported, to put it mildly, fantastic. He was reported to have said that the reason why his "cure" is not generally adopted is because of the opposition of organized medicine.

It would be of interest to know whether these alleged cures were on cases in which the diagnosis of cancer had been made by reputable pathologists.

There is testimony available to show that one case at least of real cancer treated by Dugdale was led to believe that he was doing well up to within a few hours of death.

The treatment as reported by one observer consisted of the injection of a small amount of liquid resembling water. For the first injection the charge was three hundred dollars.

The Koch institution publishes a pamphlet which carries claims for the efficacy of the treatment and much other material which is not complimentary to the medical profession in general.

THE PLANS FOR A BUILDING FOR THE BOSTON HEALTH DEPARTMENT THWARTED

For many months Dr. Mahoney, Health Commissioner of Boston, has been at work to develop plans for a location and a building for adequate accommodations for the Boston Department of Public Health. He has secured the endorsement of the Mayor of Boston.

At a meeting of the Public Health League held last year Dr. Mahoney presented plans for an attractive building and reported his selection of a lot in the Fenway on land now owned by the City of Boston near the Forsyth Dental Infirmary. It was necessary to secure permission of the legislature to use this location which was obtained but opposition by abutters developed and took definite form in the city council as shown by an adverse vote thereby defeating Mayor Nichols's order for an appropriation of $300,000 for the erection of the building.

Interested persons may find a reproduction of the street location and exterior plan of the building in the issue of this JOURNAL for December 10, 1928.

Many physicians and persons interested in public health have felt that this location is especially convenient for those who have occasion to deal with the Health Department and also that the inadequate accommodations of the present quarters demand a change. City Hall is in a densely crowded part of the city and inconvenient for approach by automobile. The proposed location is nearly ideal. Nothing better has been suggested, we believe. The arguments which have been reported in opposition to this site, so far as the JOURNAL has been informed, seem to be from abutters or representatives of nearby institutions who feel that there is some incongruity in having a public health department building near the structures now in that locality.

It should be borne in mind that this section of the city is utilized by medical schools and hospitals and not far away is the Medical Library. It seems to us that the City Health Department would be a useful and appropriate addition and will lead to more concentration of medical interests.

The Boston Health Department ought to be given a place in which its functions may be carried on to better advantage than is possible in the present location. We hope that the city council will again study this matter and either endorse the plan or suggest some other location equally good or better. This project should receive fair consideration and this important department of the city be encouraged by provisions for the best possible accommodations and service to the city.

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1928 AND SEVEN YEAR AVERAGE MONTH ENDING APRIL 13

DISEASES	1929					1928			
	Wk. ending Mar. 23	Wk. ending Mar. 30	Wk. ending April 6	Wk. ending April 13	Average cases reported for week corresponding to April 13 for past seven years	Wk. ending Mar. 24	Wk. ending Mar. 31	Wk. ending April 7	Wk. ending April 1
Cerebrospinal Men.	2	3	4	3	1	1	1	3	-
Chickenpox	86	42	46	44	46	90	81	85	64
Conjunctivitis Inf.	-	-	-	-	2	-	2	-	-
Diphtheria	28	15	23	15	29	23	39	25	23
Encephalitis Epid.	-	1	-	-	1	-	1	-	1
German Measles	246	153	204	101	13	-	6	9	4
Influenza	18	23	19	10	56	7	11	9	13
Measles	515	449	587	620	227	301	317	371	369
Mumps	114	100	112	74	58	221	275	285	172
Pneumonia (Broncho)*	41	29	42	28	43	45	36	34	22
Pneumonia (Lobar)	67	38	58	37	55	81	61	80	48
Scarlet Fever	74	67	66	67	91	55	222	95	57
Septic Sore Throat	7	1	1	3	-	1	1	3	2
Smallpox	9	4	-	1	2	-	-	-	-
Tetanus	-	-	-	-	-	1	-	-	-
Trachoma	-	-	-	-	-	-	2	-	-
Trichinosis	-	-	1	1	-	2	-	2	2
Tuberculosis (Pul.)	18	35	26	35	33	32	32	30	34
Tuberculosis (O.F.)	-	-	5	1	2	4	5	3	2
Typhoid Fever	1	-	-	2	1	1	1	1	3
Whooping Cough	25	22	52	33	59	130	97	111	94
Gonorrhoea	27	26	37	28	15	19	30	39	20
Syphilis	39	34	39	22	24	41	45	54	39

* Made reportable January 1, 1925

REMARKS: No cases of Asiatic cholera, glanders, plague, rabies in humans and yellow fever during the past seven years.

A JUDGE PASSES ON THE STANDING OF A PHYSICIAN

The Boston *Herald* of May 3, 1929 published a statement by Judge Walsh of Providence, Rhode Island, as follows:

> Judge Walsh stated today he was satisfied Dr. Dugdale was a reputable physician, and certainly not a quack, and the court could not discredit pioneers in medicine.
>
> Dr. Dugdale, the court believed, was sincere in his efforts to cure cancer. He warned the Boston doctor, however, that there must be an actual consultation in future, and then deferred sentence.

Dr. Dugdale was before the court charged with practicing medicine in Rhode Island without having been registered.

The JOURNAL has published the decision of the Massachusetts Board of Registration in Medicine that Dr. Dugdale was guilty of unprofessional conduct and therefore revoked his registration. An appeal to the Supreme Court of Massachusetts has been taken by Dr. Dugdale.

TO ORGANIZE WAR UPON VIVISECTION

The semi-annual meeting of the international conferences for the investigation of vivisection was held at the Biltmore, New York City, May 6, 1929. One hundred and nineteen societies in the United States and Canada were represented.

The claim was made that antivivisection propaganda is well organized and efforts to abolish vivisection will be prosecuted vigorously. Vivisection was referred to as "the terrible crime of killing animals in laboratories".

John S. Codman of Boston was one of the prominent speakers.

Miss Daisy Miller, who broadcasts animal stories, claimed that if the dog lovers knew what was being done by vivisectionists there would be civil war.

HOW HIGH DOES THE SUN CLIMB IN YOUR CITY?

This is an important matter, for rickets is uncommon or exists chiefly in mild form where the sun's minimum winter altitude is not under 35 degrees, every added degree lessening the likelihood of the development of that disease. Severe rickets is encountered chiefly in those cities where the sun for several winter months never climbs as high as 35 degrees above the horizon. According to two Canadian physicians whose report of the results of their researches on this subject has appeared in a recent number of the *Journal of the American Medical Association*, the period of the year during which rickets will probably develop can be calculated for any city in the world, though inclement weather and other factors interfering with the amount of effective sunshine may increase the duration of the period.—*Bulletin Children's Bureau.*

DATA ON THE COST OF MEDICAL CARE

The Department of Health is co-öperating with the National Committee on the Cost of Medical Care and has detailed one of its supervising nurses, Mrs. Elsie Thomson, to collect detailed data from about 400 families in this city. The information desired includes a record of all illnesses, month by month, together with all expenses for physicians' fees, prescriptions, household remedies, druggist supplies, hospital expenses, etc.

The names of the families co-öperating in this study will, of course, be held strictly confidential. It is hoped that a study of the information thus collected will enable the Committee to accumulate a body of reliable statistics which may be of service in solving the important problems of providing adequate medical care for the people while at the same time conserving the just economic rights of the medical profession.—*Bulletin New York City, Department of Health.*

THE IMPORTANCE OF RABIES

There are diverse and, we believe, unsound opinions concerning this disease. Some persons even claim that rabies is a figment of the imagination and deplore the emphasis put on the precautions issued by health authorities. Others contend that rabies is a disease especially prevalent in warm weather but scientists state that weather has very little influence on the incidence of the disease except as stated below because a contact animal is as likely to contract rabies in the winter as in dog days. The reason for more cases in warm weather may be due to less restriction of ranging habits of dogs in the summer and hence more exposure to rabid animals.

That the disease is a serious menace is proven by statistics which record eleven thousand seven hundred and eighty-three cases of dog bites in New York City in 1928 and two hundred and fifty-eight of the animals caught were found to be afflicted with rabies. The contrast of this country with Great Britain with respect to the prevalence of rabies is instructive because rigid quarantine regulations are in force in the latter country with the result that there is practically no rabies. The disease is controllable to a great degree through restriction of sick or unmuzzled dogs and if in addition to these precautions the propagation of comparatively worthless dogs could be prevented, there would be very few cases requiring treatment.

CO-OPERATION WITH OFFICIAL AND UNOFFICIAL AGENCIES

In a recent report Surgeon General H. S. Cumming points out that for many years it has been the policy of the Public Health Service to co-öperate with official and unofficial bodies in matters pertaining to the public health. Some of these co-öperative activities are specifically required by law, and the remainder are necessary in the interests of efficient administrative methods. It is felt that there should never be known lack of co-öperation on the part of the Federal Government agencies where such co-öperation is possible in the interests of efficient administration. This affords a means whereby duplication is avoided, expense is reduced and similar or related activities are co-ördinated. The volume of co-öperative work conducted during the fiscal year 1928 was extensive. It has included practically all the Departments and certain of the independent es-

tablishments of the Government. Among the more important may be mentioned:

1. The Department of State: Medical examination of aliens prior to granting of visas; medical treatment of destitute seamen returned from abroad; administration or foreign quarantine regulations.

2. With other branches of the Treasury Department in furnishing medical and sanitary service to the U. S. Coast Guard, including retired personnel, and in the prevention and control of venereal diseases among Coast Guard personnel; in issuing permits to ships for medicinal liquor and narcotics; in aiding the Bureau of Customs in preventing violations of the quarantine act of February 15, 1893, because of failure of masters of vessels to secure consular bills of health; in aiding the Bureau of Customs in the matter of standardizing and administering procedures required of aircraft arriving in the United States from foreign countries; and in issuing port sanitary statements to outgoing vessels; with the Federal Narcotics Control Board in the disposition of seized narcotic drugs.

3. With the Department of Justice in matters related to the protection of the interests of the United States in which the administration of the quarantine laws and regulations and the care and preservation of the public property is concerned; treatment of Federal prisoners detained in jails at certain ports and the care of a convicted leper during his prison sentence at the National Leper Home.

4. With the Department of the Interior, by medical examination of applicants for civil service retirement and for military pensions; in advising the Bureau of Education in connection with sex education and venereal disease control in high schools and colleges; in the operation of the venereal disease clinic at the Hot Springs National Park; in investigations of water and sewerage systems at Indian reservations; in the supervision of sanitation in public parks and monument reservations; in the studies of the lighting of rooms in buildings of the Interior Department; in assistance rendered the Indian Bureau in connection with medical and sanitary work among Indians and on reservations, including determination of the malarial problem among the Pueblos of New Mexico.

5. With the Department of Agriculture by assisting in the enforcement of plant and animal quarantine; in the enforcement of the Pure Food Law in relation to the adulteration of shellfish and in the prevention of the spread of typhoid fever through milk supplies in Montreal, Canada, and vicinity; in the sanitary inspection of national forests and water sheds; in assisting the Food, Drug and Insecticide Administration in its study of commercial chill tonics and in the biological assay of ergot; in measurement of sky brightness in connection with illumination studies.

6. With the Department of Commerce in the investigation of warning agents for commercial gas; in studies in co-öperation with the Bureau of Standards as to the possibility of benzol poisoning among certain laboratory workers, and in the testing of screen doors for use in the screening studies for malaria control; physical examination and instruction and examination in the principles of first aid of applicants for license as ships' officers, at the request of the Steamboat Inspection Service; treatment of lighthouse keepers, and seamen from vessels of the lighthouse establishment, Coast and Geodetic Survey, and Bureau of Fisheries; medical supplies to lighthouse vessels; physical examination of commercial air pilots; in assisting in designing a modern sewerage disposal system for the helium plant at Amarillo, Texas; in the extension of the use of laboratory and other Bureau facilities at the Shellfish Research Laboratory, Craney Island, Norfolk, Virginia, for study of oyster drill, and in the investigation of the water supply at the Fisheries Biological Station, Fairport, Iowa; by aiding in the matter of standardizing and administering procedures required of aircraft arriving in the United States from foreign countries.

8. With the United States Employees' Compensation Commission in the hospital and outpatient treatment of disabled Federal employees; physical examinations and special investigations; a permanent board of medical officers for consideration of disputed and difficult claims; medical assistance in carrying out the Longshoremen's and Harbor Workers' Compensation Act and the District of Columbia workmen's compensation act; advice in regard to medical problems connected with compensation and hospital and outpatient treatment of injured Federal employees.

9. With the Civil Service Commission in physical examinations of applicants for employment, reinstatement, and retirement.

Co-öperation and assistance was extended to a number of other bureaus and departments.

The Public Health Service co-öperated with all of the States of the Union in the collection of reports of the prevalence of diseases and epidemiological data relating to the communicable diseases. The Public Health Service was also able to assist and co-öperate with a number of States in various public health matters relating to venereal disease control, demonstrations of rural sanitation; flood sanitation; supervision and certification of water supplies used by interstate carriers; investigations relating to the shellfish growing areas and the development of local sanitary control machinery; campaigns for the prevention and control of trachoma; stream pollution; malaria control and other special public health problems.

Co-öperation was also extended to a number of cities in connection with matters pertaining to the public health.

Co-öperation was effected with a number of societies engaged in public health activities, among which may be mentioned, the American Public Health Association, the Service of Epidemiological Intelligence and Public Health Statistics of the League of Nations, the National Safety Council, the American Red Cross, the Rockefeller Foundation, and the International Institute of Statistics.—*United States Public Health Service.*

THE LEAD TREATMENT OF CANCER

In 1925 Blair Bell, Professor of Gynecology and Obstetrics of the University of Liverpool, England, called attention to the fact that certain cases of malignant disease had been arrested by the intravenous administration of colloidal lead. The foundation for this treatment was the well-known toxic action of lead on the tissues of the placenta in childbearing women. Lead acts as a poison under such

circumstances and causes premature delivery of the child, and this fact is so well known that among the working classes in England lead preparations have been long used as abortifacients. Arguing that tumors are occasionally seen composed of the type of cell which forms the placenta and that other types of cancer cells seem to have similar biological qualities, he tried the injection of lead acetate in an advanced case of breast cancer. The growth entirely disappeared and this patient is still well eight years after her treatment. Further study showed that the soluble forms of lead were too toxic for general use and after experiments with a variety of lead compounds the best preparation was found to be one produced by the Bredig method of arcing between lead poles in an aqueous fluid, the bottom of the container containing lead particles to increase the number of arcs. The coarse suspensoid so produced was centrifugalized to remove the coarser particles of lead. The fluid so treated, stabilized by a small quantity of gelatin, contains a coarse colloidal suspension of lead, lead hydrate and lead carbonate. The injection of this mixture intravenously in a large series of cases of cancer of various types produces a suspension of the activities of the growth in about twenty per cent. of the patients treated. Some of these patients have remained well for from three to five years following the treatment. In others the course of the disease was suspended for the time being, but ultimately death was caused by the extension of the cancer. In others the disease was unaffected and ran its usual course.

There can be no question of these results as the patients have been observed by many wholly unbiased English and foreign clinicians. The sections from the tumors have been preserved and have been seen by leading pathologists from all over the world. The x-ray plates are available for many cases, and all the clinical records are open to inspection. The cases treated were all hopeless and inoperable. The administration of the lead in quantities of 50 to 100 milligrams at intervals of one to two weeks until 600 milligrams have been given, as recommended by Blair Bell, is often followed by severe symptoms of poisoning. The patients are nauseated and may have sharp febrile reactions. Marked anemia is often produced, together with severe prostration. The giving of small repeated doses is less advantageous, as the patient may develop symptoms of lead poisoning. The anemia when severe must be combated with transfusion; the nausea and vomiting with intravenous injections of calcium chloride. Washing the stomach to remove the lead secreted through the mucous membrane is helpful and small quantities of magnesium sulphate should be given to render insoluble any lead which is excreted into the intestines. Despite all of these complications the fact that a few hopeless patients have been cured has led to a widespread study of the treatment. A great variety of preparations of lead and other metals have been investigated and lead has been shown to be the most effective. . . .

It is quite evident from all that has been said above that the lead treatment of cancer is still in its early experimental stage; that any statements as to its future are impossible; that the difficulties and dangers of the treatment are such that it can be used only on inoperable cases and preferably in the hands of those who have a wide experience in treating cancer and full knowledge of the potentialities of radiation therapy together with good clinical sense. It is by no means a method to be recommended in general for treatment of hopeless cases and certainly not in those who are advanced in their disease. It certainly is also not a procedure to be used by the general practitioner who has neither the laboratory facilities nor the clinical experience required.—Excerpts from *Campaign Notes of the American Society for the Control of Cancer.*

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

March 1929

GENERAL PREVALENCE

The total reported incidence of communicable diseases for March was rather low. The only disease showing an unusually high incidence was smallpox, seven cases being reported.*

The reported incidence of chickenpox, mumps, diphtheria, scarlet fever, lobar pneumonia, influenza, pulmonary tuberculosis, whooping cough and typhoid fever was within endemic limits.

In 1928 a new low record for typhoid fever for the first quarter of the year was reached with fifty-five cases. This year a new low mark for the first quarter is again recorded, only thirty-seven cases of typhoid fever being reported. This is a reduction of about thirty-three per cent from last year's record for the same period.

The reported incidence of syphilis, gonorrhea, anterior poliomyelitis, measles, German measles and non-pulmonary tuberculosis was low.

RARE DISEASES

Actinomycosis was reported from Bridgewater, 1; total, 1.

Anterior Poliomyelitis was reported from Athol, 1; Somerville, 1; total, 2.

Anthrax was reported from Lowell, 1; Peabody, 2; total, 3.

Dysentery was reported from Chelsea, 1; Waltham, 1; Total, 2.

Encephalitis lethargica was reported from Boston, 3; total, 3.

Epidemic cerebrospinal meningitis was reported from Beverly, 1; Boston, 4; Cambridge, 1; Chelsea, 2; Fitchburg, 1; Gill, 1; Greenfield, 1; Lowell, 1; New Bedford, 1; Westfield,1; Worcester, 1; total, 15.

Pellagra was reported from Boston, 1; Worcester, 1; total, 2.

Septic sore throat was reported from Boston, 5; Cambridge, 2; Danvers, 1; Framingham, 1; Haverhill, 2; Melrose, 1; Newton, 1; Plymouth, 4; Pittsfield, 1; Worcester, 1; total, 19.

Smallpox was reported from Boston, 2; Brookline, 1; Gardner, 1; Malden, 1; Medford, 1; Somerville, 1; total, 7.

Trachoma was reported from Andover, 1; Boston, 7; Cambridge, 1; Lowell, 1; Somerville, 1; total, 11.

Trichinosis was reported from Arlington, 4; Attleboro, 1; Foxboro, 1; total, 6.

*This report compiled before the epidemic of about one hundred cases since March was recorded.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

	Cases in Entire Population				Case Rates per 100,000 Pop.		
	March 1929	March 1928	Prosodemic Index	Epidemic Index	March 1929	March 1928	Expected Rate***
ALL CAUSES	8020	15877	-	-	183.1	367.1	-
Ant. Poliomyelitis	2	5	13*	.15**	.05	.1	.3
Diphtheria	344	411	279*	1.2 **	7.9	9.5	6.4
Measles	1541	8236	4362*	.35**	35.2	190.4	99.6
Pneumonia, Lobar	695	618	636*	1.1 **	15.9	14.3	14.5
Scarlet Fever	1375	1407	1492*	.9 **	31.4	32.5	34.0
Tuberculosis, Pul.	459	435	490*	.9 **	10.5	10.1	11.0
Typhoid Fever	18	13	19*	.9 **	.4	.3	.4
Whooping Cough	699	1199	1195*	.6 **	16.0	27.7	27.3
Chicken Pox	761	975	-	-	17.4	22.5	-
German Measles	173	111	-	-	3.9	2.6	-
Gonorrhea	371	402	-	-	8.5	9.3	-
Influenza	387	50	-	-	8.8	1.2	-
Mumps	440	1487	-	-	10.0	34.4	-
Syphilis	147	138	-	-	3.4	3.2	-
Tuberculosis, O.F.	61	82	-	-	1.4	1.9	-

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

The Massachusetts Medical Society

148th
Anniversary
June 10, 11, 12, 1929
Copley Plaza Hotel
For details see JOURNAL of
May 30

For information about arrangements
write Dr. James Hitchcock
126 Massachusetts Avenue, Boston

CORRESPONDENCE

OFFICIAL ACTIONS BY THE BOARD OF REGISTRATION IN MEDICINE.

May 3, 1929.

Editor N. E. JOURNAL OF MEDICINE:

As a result of hearings held by the Board of Registration in Medicine on May 2, 1929, the following votes were taken:

Dr. Edward F. Gleason of Boston charged with gross misconduct in the practice of his profession as shown by his alleged treatment to produce an illegal abortion. Voted that Dr. Gleason be placed on probation for one year.

Dr. Cora J. Marston of Boston charged with gross misconduct in the practice of her profession as shown by her alleged treatment to produce an illegal abortion and alleged sale of suppositories to prevent pregnancy. Voted that Dr. Marston be suspended for three months on the charge of selling suppositories for the prevention of pregnancy.

Dr. Harvey A. Field of Mattapan charged with gross misconduct in the practice of his profession as shown by his alleged agreement to perform an illegal abortion. Voted unanimously that Dr. Field's registration be revoked.

Dr. Eustace B. Carmichael of Worcester charged with gross misconduct on account of the revocation of his prohibition permit. Voted that Dr. Carmichael's registration be suspended for one month.

Dr. H. D. Gafney of Ware and Dr. C. J. Carr of Framingham charged with failure to file proper birth returns were placed on probation for one year.

The registration of Dr. Wallace P. MacCallum was restored with an unlimited probationary period.

Very truly yours,

DR. FRANK M. VAUGHAN, *Secretary.*

RECENT DEATH

HILL—Dr. Ira Clarke Hill, a Fellow of the Massachusetts Medical Society since 1886, died at his home in Springfield, May 7, 1929, aged 71.

He was born in Colchester, Vermont, in 1858 and was a graduate of Middlebury College and of the University of Vermont, College of Medicine in 1884.

NEWS ITEMS

MEETING OF THE INTERNATIONAL PHYSIOLOGICAL CONGRESS—Announcement of the meeting of the International Physiological Congress which will open its sessions at the Harvard Medical School August 19, 1929 has been made. More than eleven hundred delegates have indicated plans to attend. Over four hundred will represent thirty-three foreign countries. Many of this group will have members of their families with them.

The scientific sessions will be held from Tuesday to Friday of that week. A banquet has been planned for Thursday evening, August 22.

Officers of Harvard University, the Commonwealth and the Federal Government will extend welcome to the members of the Congress.

THE PERIL OF THE COCKTAIL—Special news item to the *New York Times* quotes Dr. Georges Guillian, who stated in an address before the French Academy of Medicine that although among the working classes there is a decline in disease due to intoxicating beverages, he had found an alarming increase among young people of wealthy families due to cocktails and other strong alcoholics. He felt that the excessive use of intoxicating liquor by young people is a very definite danger to the people of that country.

He found that many automobile accidents were due to the inhibiting effect of alcohol on psychomotor reactions.

THE ELECTION OF DR. ARTHUR B. EMMONS, 2ND—Dr. Arthur B. Emmons, 2nd, of Dover, Mass., has been elected Director of the Boston Metropolitan Chapter of the Red Cross by the executive committee.

After graduation from the Harvard Medical School, Dr. Emmons studied obstetrics but soon found public health activities more alluring. For several years previous to 1926 he was interested in the study of health conditions in Boston stores for the Harvard School of Public Health. He wrote a book entitled "Health Control in Mercantile Life," which is recognized as a text-book on that subject. He has made a study of schools in twenty-three states. He served in the World War and became head of the medical staff of Evacuation Hospital No. 2. The Red Cross will find in Dr. Emmons an indefatigable worker who brings to the service unusual executive ability.

DAILY PAPERS REPORT THAT DR. GEORGE H. BIGELOW IS SUED—According to statements in the daily press, Dr. George H. Bigelow has been sued by Dr. William F. Koch, who claims to be the discoverer of the Koch Cancer Cure. The suit is entered in the Suffolk Superior Court. The *ad damnum* is stated to be fifty thousand dollars. The report states that on April 11, 1928, Dr. Bigelow discredited this treatment before an audience in Fitchburg, Mass., composed of nurses and physicians. It is alleged that in consequence of this address the use of this treatment has declined in that section of the State. John J. Higgins is counsel for Dr. Koch.

This suit will attract wide attention. It is good advertising for the Koch method. Dr. Bigelow has our admiration for his indomitable courage and devotion to the welfare of the people.

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For details see Journal of
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NOTICES

REMOVAL OF DR. JOHNS'S OFFICE

Juanita P. Johns, M.D., announces the opening of her new office at 419 Boylston Street, Boston, Massachusetts, Rooms 327-328.

EXERCISES UNDER THE EDWARD K. DUNHAM LECTURESHIP*

Monday, May 20, "Chronaxie, its significance and measurement; the chronaxic relationship between muscle and its motor nerve."

Wednesday, May 22, "Chronaxic theory of the efficacy of the nerve impulse; isochronism as a principle of 'switching' in the nerve centers."

Friday, May 24, "Summation and the *addition latente;* heterochronism in the reflex arc; mechanism of the action of strychnine."

At five o'clock at the Harvard Medical School Amphitheater, Building C, by Louis Lapicque, M.D., D.Sc., LL.D., Professor of General Physiology at the Sorbonne.

*In 1923 there was founded in memory of Doctor Edward K. Dunham (M.D., Harvard, 1886), the Edward K. Dunham Lectureship for the Promotion of the Medical Sciences. Among the useful purposes for which the Foundation was established was that of binding closer "the bonds of fellowship and understanding between students and investigators in this and foreign countries." The lecturers are chosen from "eminent investigators and teachers in one of the branches of the Medical Sciences, or of the basic Sciences which contribute towards the advance of Medical Science in the broadest sense." The lectures, which are given annually, are "free and open to the faculty and students of the Harvard Medical School and College, and all other interested professional persons who may profit by them."

REPORTS AND NOTICES OF MEETINGS

THE SIXTY-FIFTH ANNUAL CONVENTION OF THE MASSACHUSETTS DENTAL SOCIETY.

This meeting was held at the Hotel Statler during the week beginning May 6.

Child Dentistry was the leading subject for consideration in the scientific sections.

The officers elected for the ensuing year are: President, Dr. Thomas K. Ross, Fitchburg; president elect, Dr. Frank A. Delabarre, Boston; vice- president, Dr. William H. Gilpatrick, Boston; secretary, Dr. Philip E. Adams, Boston; assistant secretary, Dr. Robert S. Catheron, Boston; treasurer, Dr. Joseph T. Paul, Boston; editor, Dr. E. Melville Quimby, Boston.

THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The last meeting of this society was held May 1 at the Holden Hospital, Holden, Mass.

Dr. L. A. Alley, superintendent of the Lakeville State Sanatorium, read a paper and presented lantern slides on Extra Pulmonary Tuberculosis. The paper and slides were very interesting, showing what real work the institution is doing.

W. B. Davidson, M.D., *Acting Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY

The annual meeting of the Norfolk District Medical Society was held May 7. The officers elected are as follows:

President: Dr. S. F. McKeen, Brookline.
Vice-President: Dr. Walter A. Lane, Milton.
Secretary: Dr. Frank S. Cruickshank, Dorchester.
Treasurer: Dr. George W. Kaan, Reading.

Commissioner of Trials: Dr. H. F. R. Watts, Dorchester.

Nominating Councillors: Dr. David G. Eldridge, Dorchester; Dr. C. S. Francis (alternate), Brookline.

Censors: Dr. S. F. McKeen, Brookline; Dr. J. E. Hallisey, Dorchester; Dr. A. H. Davison, Milton; Dr. A. J. Nute, Jamaica Plain; Dr. J. S. May, Roxbury.

Councillors: Dr. F. J. Bailey, Dorchester; Dr. Franklin A. Balch, Jamaica Plain; Dr. A. S. Begg, West Roxbury; Dr. David N. Blakely, Brookline; Dr. Frank A. Bragg, Foxboro; Dr. W. L. Burrage, Brookline; Dr. Andrew P. Cornwall, Brookline; Dr. T. J. Coyne, Roxbury; Dr. Samuel Crowell, Dorchester; Dr. Frank S. Cruickshank, Dorchester; Dr. F. P. Denny, Brookline; Dr. David G. Eldridge, Dorchester; Dr. W. C. Emery, Dorchester; Dr. Miner H. A. Evans, Dorchester; Dr. C. B. Faunce, Jr., Jamaica Plain; Dr. C. S. Francis, Brookline; Dr. Walter A. Griffin, Sharon; Dr. J. B. Hall, Roxbury; Dr. George W. Kaan, Reading; Dr. W. B. Keeler, Roxbury; Dr. Walter C. Kite, Milton; Dr. Edward B. Lane, Jamaica Plain; Dr. Walter A. Lane, Milton; Dr. Olga Leary, Jamaica Plain; Dr. Edward N. Libby, Jamaica Plain; Dr. S. F. McKeen, Brookline; Dr. W. R. Ohler, Jamaica Plain; Dr. E. P. Powers, Roxbury; Dr. H. B. C. Riemer, Norwood; Dr. S. A. Robins, Roxbury; Dr. C. A. Rowe, Milton; Dr. Victor Safford, Jamaica Plain; Dr. R. D. Schmidt, Dorchester; Dr. J. L. Sullivan, Roxbury; Dr. H. F. R. Watts, Dorchester; Dr. W. A. White, Roxbury; Dr. W. H. Young, Dedham.

HAMPSHIRE DISTRICT MEDICAL SOCIETY

The annual meeting of the Hampshire District Medical Society was held May 8. The following officers were elected:

President: Francis E. O'Brien, Haydenville.
Vice-President: Justus G. Hanson, Northampton.
Secretary: Luther O. Whitman, Northampton.
Treasurer: Luther O. Whitman, Northampton.
Librarian: Jane B. Armstrong, Northampton.
Commissioner of Trials: Oliver W. Cobb, Easthampton.

Five Censors: A. J. Bonneville, Hatfield; C. H. Wheeler, Haydenville; J. D. Collins, Northampton; O. W. Cobb, Easthampton, E. H. Copeland, Northampton.

Councillors: A. J. Bonneville, Hatfield; J. G. Hanson, Northampton; F. H. Smith, Hadley.

Councillor on Nominating Committee: Principal, J. C. Hanson, Northampton; Alternate, F. H. Smith, Hadley.

The Presidential address was given by Dr. Francis E. O'Brien on "Quartz Light Therapy in Pulmonary Tuberculosis."

L. O. Whitman, *Secretary.*

THE NEW ENGLAND SECTION OF THE AMERICAN ACADEMY OF PHYSIOTHERAPY

The next regular meeting of the New England Section of the American Academy of Physiotherapy will be held at the Medical Library, 8 Fenway, Boston, on May 29, 1929.

PROGRAM

Zonetherapy, William H. Fitzgerald, M.D. Hartford, Conn.

Discussion, Samuel P. Sobel, M.D. of New York City.

Members who care to do so will meet at the Hotel Mayflower, 1138 Boylston Street, Boston, at 6:30 P. M. for dinner.

SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next meeting of the South End Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, on Tuesday, May 21, 1929, at 12 noon.

The speaker will be John B. Hawes, 2nd., M.D., and his subject will be "Non-Tuberculous Pulmonary Conditions". His talk will be illustrated with lantern slides.

All physicians are cordially invited to attend. The usual luncheon will be served at 1 o'clock.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS

Annual Meeting, Election of Officers, and Dinner, the Copley Plaza, Wednesday, May 22, 1929, 6:30 P. M. $2.50 per plate.

Communications:

Recent Advances in the Treatment of Some Circulatory Diseases of the Extremities: Dr. James C. White, Massachusetts General Hospital. Discussion opened by Dr. Hilbert F. Day.

The Modern Treatment of Burns, with Especial Reference to Industry: Dr. William Edward Browne. Discussion opened by Dr. James C. White.

C. P. Sylvester, *President,*
Wm. Pearce Coues, *Secretary.*

SOCIETY MEETINGS

May 16—New England Hospital for Women and Children. Complete notice appears on page 1012, issue of May 9.

May 21—South End Neighborhood Medical Club. Detailed notice appears on page 1063.

May 22—Massachusetts Society of Examining Physicians. Complete notice appears on page 1063.

May 29—The New England Section of the American Academy of Physiotherapy. Complete notice appears on page 1063.

June 13—International Hospital Congress. Complete notice appears on page 212, issue of January 24.

July 8-9—American Association for the Study of Allergy. Complete notice appears on page 906, issue of April 25.

July 9—American Heart Association. Scientific Meeting from 2 to 6 P. M. in the Auditorium of the Woman's Club, 448 Taylor Street, between 12th and 13th Streets, Portland, Oregon.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 468, issue of February 28.

BOOK REVIEWS

Diseases of Children. Edited by Garrod, Batten, Thursfield and Paterson. William Wood & Co. Price $13.00.

This is the second and revised edition of a large book of over one thousand pages, written by thirty-seven well-known British pediatrists. In general, it is to be highly recommended, although the type is small, which makes it rather hard to read. It is a complete text-book of pediatrics, covering all the usual subjects, some rather superficially, some in a good deal more detail than is usual in such a work. Considering the number of authors, it is remarkably uniform and well arranged.

There is a tendency in some of the sections to refer to older work, and to leave out more modern ideas. Thus, the section on "Hemorrhagic disease of the Newborn" is quite behind the times, and no mention whatever is made of thick cereal feeding in pyloric spasm, a method of treatment which has been such a boon to those who have used it in this country. The section on "coeliac" disease is interesting in that the author describes a type of case due almost entirely to fat mal absorption, and pays very little attention to the starch type which we see here so much. This is in line with the writings of all other British physicians who have written on the subject, and it is quite probable that there is considerable difference between what they have described as coeliac disease and the conditions to which we so loosely apply the term here. The sections on the heart, ductless glands, and functional diseases of the nervous system are especially good, probably better than could be found in almost any other text-book.

On the whole, although it has some defects, this should prove to be a valuable reference and text-book.

Textbook of Clinical Neurology. By M. Neustaedter, M.D., Ph.D. Philadelphia. 1929.

The author of this new textbook attempts the impossible and does it rather poorly.

The impossible in this case is the satisfactory arrangement of a textbook of neurology on the basis of symptomatology.

For example: Part II is devoted to the Spastic Paralyses, Part III to the Flaccid Paralyses, and Part IV to the Ataxias, Tremors, and Spasms. Multiple Sclerosis is discovered among the Ataxias, and the text goes on to state, "Spasticity, motor weakness, and a shuffling, hopping gait, are usually the beginning symptoms. In the course of further progress of the disease, spastic paralyses are encountered in all cases. Flaccid paralyses, as a result of anterior horn lesions are rare. The two further motor disturbances always encountered are the intention tremor and ataxia."

Why this disease is consequently grouped with the Ataxia is not explained. More careful proofreading would have eliminated mistakes such as the repetition of illustrations which are identical. One questions, also, the propriety of placing in a textbook the author's personal laboratory investigations until such investigations are unquestionably accepted.

This book might be added to a library as an additional book on clinical neurology, but its place is doubtful as a textbook.

Old Age, the Major Involution: The Physiology and Pathology of the Aging Process. by Aldred Scott Warthin. New York. Paul B. Hoeber, Inc. 1929. Illus. Price $3.00.

Dr. Warthin, whose long experience as a pathologist has given him an exceptional opportunity to see the end results of the aging process, writes a most interesting book. The contents were first given as a Carpenter Lecture at the New York Academy of Medicine in October, 1928. They have been partly printed in medical journals and are now expanded and re-written.

Dr. Warthin's main theme is that old age is simply an involution process, essentially physiologic in nature, and that old age should be considered as a normal major involution and not as a pathologic process. His investigations bear out these statements at every hand and he concludes with some excellent expressions of opinion in regard to so-called "life extension." One reads a good deal in the literature today about the possibilities of extending human life. Dr. Warthin points out that although there has been a definite increase in the average longevity from about 35 years in 1880 to 54 years in 1920, this is due largely to the saving of life through the prevention of extrinsic pathological death in the earlier decades of life and that there has been no definite extension of the normal biologic life limit. Modern preventive medicine and hygiene, therefore, have not extended the biologic life limit and cannot do so. If the average age of longevity be raised to 60 years, this will probably be as high as the rate can ever be raised. As a matter of fact, Dr. Warthin predicts that the biologic limits of life are more likely to be decreased in the next evolutionary phase rather than lengthened.

The book concludes with an interesting but very short chapter on "rejuvenation", calling special attention to the work of Voronoff and Steinach. Dr. Warthin believes that these operations for so-called "rejuvenation" are really procedures that result only in re-erotization, associated with certain evidences of increased energy of the general metabolism. He finds no evidence that either operation leads to a restoration of the function of spermatogenesis, and he is emphatic in his belief that no rejuvenescence is possible for the senile individual. For those who live to their biologic life limit, age cannot be escaped. Modern hygiene, however, has increased the

number of human individuals, both fit and unfit, who come to maturity and to the period of senescence.

Dr. Warthin's views have been criticized as depressing and pessimistic. He thinks that just the opposite result is in his mind—the presentation of a really workable philosophy of old age as an antidote to the modern theories of life extension of the individual to extreme limits and to a possible rejuvenation. He speaks of the many compensations of normal old age—a period of ripeness of experiences and observation, of the contemplation and philosophical evaluation of the world about us, of quiet brooding and the creative possibilities engendered by such. The compensations of the seventh and eighth decades are many because of the longer preservation of the spiritual and mental functions over the other functions. Since this is so, "happy is the man who comes into his old age with the capacity of intellectual pleasures fully developed, not in one line alone, but in many, in literature, art, music and science. If he has developed hobbies in any direction so much the better, and much better still if he has a number of hobbies and not merely one. Diversity of interests keeps the mind young; the passing from one interest to another freshens, rests and revivifies the mental processes. Creative mechanical work of some kind offers one of the best outlets to the old man's restlessness; and all the occupations that may offer, that of gardening, of growing and planting and tending growing things, is the very best form of exercise and avocation adapted to the needs of the aged individual. There is also a very definite psychologic relationship shown in this return of the old man to the soil."

The book is well produced by the Hoeber Company. It can be strongly recommended not only as a scientific presentation of the subject but also as a pleasing philosophical discussion of a normal physiological process, ending in a condition that all of us must face—old age.

The Pathogenesis of Tuberculosis. By ALLEN K. KRAUSE, M.D.

This reprint from the *American Review of Tuberculosis* of August, 1928, is an address delivered at the annual meeting of the College of American Physicians at New Orleans, March 6, 1928.

After a preliminary discussion of the meeting of that much discussed term "activity" in which he presents clearly the difference between tuberculosis infection and tuberculosis disease, he describes the course of the tubercle bacillus from its entrance into the body, from the very inception of tuberculosis infection and its development into disease and its pathogenesis. To those interested in the subject and to students of tuberculosis this lecture by Dr. Krause is of the greatest of value.

Tuberculosis and Public Health. By ALLEN K. KRAUSE, M.D.

This reprint from the *American Review of Tuberculosis*, September, 1928, is the Hermann M. Biggs Memorial Lecture for 1927, given under the auspices of the Medical Society of the County of New York and the New York Tuberculosis and Health Association at the New York Academy of Medicine, November 16, 1927.

It is too brief for review without being the merest of summaries and it is not too long for anyone who is interested to read. It consists of a scholarly and erudite description of the growth of the modern public health movement out of the campaign against tuberculosis. The notes at the end are of the greatest interest and show the tremendous capacity of Dr. Krause's literary storehouse.

The New Pocket Medical Formulary. By WILLIAM EDWARD FITCH, M.D. Fifth Edition. P. A. Davis Company, Philadelphia. 1928. Pp. 501. Price $3.00.

It is unbelievable that such a book should be written in the year 1928 and still more remarkable that it would find a publisher. There may be some excuse for collecting certain "pet formulae" which can be used in "Chronic Bronchitis," in "Skin Diseases," etc., but when an author discusses modern specific treatments with so little evidence of personal experience or knowledge of the really important researches of others, one is forced to hold up his hands in horror.

A few quotations will be sufficient. Under "Pneumonia," we find a recommendation for icebags with the following precautions required, "If dulness corresponding to right auricle in the 4th right interspace exceeds 1-½ finger breadths and if dulness be also detectable in the 3d space close to the Sternum, right heart should preferably be relieved with leeches before icebag is applied." Further, we read about "inhalations of oxygen passed through absolute alcohol" and "Serum Treatment," "the serum most employed has been that of Pane, administered subcutaneously in the quantity of 40 to 120 c. c. in 24 hours. Other sera have been tried but none has yet been found of positive benefit, much less curative."

Under the treatment of "Syphilis" we read, "The latest of the arsenic remedies is '606' discovered by Ehrlich in Nov. 1909, after years of experiment in conjunction with Dr. Hata. Dr. Ehrlich claims that this remedy has not as yet been perfected. Its administration is not without danger. For this reason, its use has been confined to certain investigators. It is claimed that one injection of this remedy destroys all the spirochetae, being harmless to animal tissues and that one injection arrests the disease to as great an extent as one year's treatment by any other method. If future experience should prove these assertions to be correct, it should serve as a fitting climax to the recent advances made in the study of a disease which is almost without parallel in the history of medicine."

Under "*Diphtheria*" we read "if on account of poverty, people cannot afford anti-toxin, Curtius uses local treatment alone and has had excellent results with it. (Of 28 patients treated during one summer with it alone, only one died). He employs Loeffler's solution."

Under "*Diabetes*" we read, "the administration of insulin will make the condition of the patient more tolerable." A little further on, "Be sure the patient is in a hospital and that the blood and urine studies for sugar have been made and that the conditions warrant the use of the remedy." The diet list for diabetes gives under "General Rules", "Reduce to a minimum all starches and sugars, increase animal diet and fats", a routine which, if followed by a careless practitioner would certainly be a probable way to throw the patient into coma.)

Under "*Appendicitis*," we find at least one piece of

good advice, namely, "as soon as symptoms indicate appendicitis, send for a surgeon as a consultant", but "in the meantime, place the patient in bed, order absolute quiet, unload the bowels." There then follow two prescriptions one for 1 oz. magnesium sulphate and a second, for 1 oz. castor oil, with instructions to give one dose and repeat if necessary. (Either method would be helpful in increasing the danger of rupture and peritonitis.)

Under "*Asthma*," mention is made of painting the mucous membrane of the nose with adrenalin chloride, but there is no mention of its sub-cutaneous injection or of the use of ephedrine.

Turning then to some of the tables of differential diagnosis, one notes under "Anemia, Progressive Pernicious", "gastric symptoms not prominent" and "examination of gastric contents after a test meal usually negative" and "some improvement may be brought about, even cure, though rarely. " (Liver diet is not mentioned.)

How can so small a book carry so much misinformation and dangerous advice?

Pneumonia. By FREDERICK TAYLOR LORD, M.D. Published by Harvard University Press. 1929, in the Series of Harvard Health Talks. Pp. 84. Price $1.00.

In this little monograph, Dr. Lord gives a clean-cut summary of the present knowledge of pneumonia. It is intended for the lay reader but is of interest also to the medical man in that he brings up to date the discussion of the value of Type I pneumonia serum, quoting figures to show that, if given within the first three days, Type I serum has reduced the death rate in Type I cases from over 20% to 10%.

The Surgical Clinics of North America. October, 1928. Vol. 8, No. 5. W. B. Saunders Company, Philadelphia.

This is the New York number and consists principally in clinics from the Fifth Avenue Hospital.

Bancroft opens with an excellent discussion of *acute appendicitis.* In drained cases he prefers to suture only the peritoneum and to leave the rest of the wound open. With this method in McBurney incisions he has decreased the incidence of hernia by avoiding sloughing fascia. A duodenal tube inserted at the time of operation, free use of salt salution, and jejunostomy in cases of ileus are other features which he emphasizes.

Stanley Brown reviews the use of *gentian violet* as an antiseptic and reports its successful use intravenously in the *treatment of phlebitis.*

Berg presents a comprehensive clinic on the *operative cure of gastric and duodenal ulcer.* He argues very convincingly in favor of the radical subtotal gastrectomy in all cases of peptic ulcer.

The roentgenological aspects of gastro-enterology are discussed by Cole while Held considers the diagnosis of gall bladder disease.

Many other interesting papers are given by leading New York surgeons.

Child Health and Character. ELIZABETH M. SLOAN CHESSER. New York. 1927. 204 pages. Oxford University Press. Price $1.50.

This volume is another attempt to tell parents how to bring up children in two hundred pages. The reviewer does not believe that many doctors understand the use of castor oil in acute illness, the meaning of "inherited libido," the relation between cowardice and gland deficiency, the exact status of the various vitamins, sensitization, progressive education, the differential diagnosis of chorea and tic, or dyspepsia and gastritis. Still less does he believe that any doctor can convey a fair impression of all these, and many more, subjects to mothers in the space allotted.

Getting Ready to be a Mother. By CAROLYN CONANT VANBLARCOM, R.N. Second Edition Revised, 1929. Cloth—286 Pages. Price $1.75. The MacMillan Company, New York.

Considering the difficulty of presenting effectively to the lay reader the science and art of medicine, this is an almost inconceivably well written book, admirably accomplishing its purpose of instructing the expectant mother who cares to know. Its arrangement and display, its vocabulary and sentence structure require only intelligence and the ability to read English for clear understanding. The chapters on anatomy, physiology, and embryology, nicely captioned "Where the Baby's Life Begins", and "How the Baby Develops Before He Is Born", are complete, simple, and accurate. The greater part of the book is devoted to practical details of prophylaxis, ordinary complaints with their treatment, and symptoms of trouble. Throughout, the discussion is clear and to the point, leading the intended reader to a position beautifully poised between noxious anxiety and dangerous complacency. The doctor's responsibilities are everywhere made patent, and the limits finely drawn beyond which the patient should not go in treating herself. The chapters on caring for the baby are comprehensive and replete with common sense. It is well illustrated.

The Normal and Pathological Physiology of Bone. Its Problems. By R. LERICHE, Professor de Clinique Chirurgicale a la Faculté de Strasbourg and A. POLICARD, Professor d'Histologie a la Faculté de Lyon. Authorized English Translation by Sherwood Moore, M.D., Professor of Radiology, Washington University School of Medicine and J. Albert Key, M.D., Assistant Professor of Clinical Orthopaedic Surgery, Washington University School of Medicine, St. Louis. The C. V. Mosby Company 1926. Price $5.00.

Moore and Key deserve the gratitude of the English speaking medical public who do not easily read French, for translating this refreshing book of Leriche and Policard on the physiology of bone. The authors seem to be familiar with all significant literature having to do with the growth and development of bone and yet to be bound by no traditional explanations or theories. The book is dedicated to the great investigator of bone physiology, Leopold Ollier, though they frankly say that they have often felt called upon to contradict him. They have, however, followed his spirit and been guided by his methods and they think he would understand them if he were still living. The authors propose many new concepts of the physiology of bone, which their wide clinical observation and their experimental research seem to justify. The essentiality of the

oedema and stagnation if a fracture is to unite, and the inhibition which an active circulation in the immediate neighborhood of bone repair exerts, are startling but, apparently proved pronouncements. They emphasize the importance of the biochemical relations of the tissues and fluids and elaborate their theory as to the manner in which the "calcific surcharge" which makes new bone formation possible, is provided. They contend that bone resorption is necessary for new bone formation: bone grafts must always die in order to live. The periosteum, speaking in an accurate histological sense, they find has no osteogenic power. The formation of heteroptotic ossifications is discussed and the application of the general laws of ossification to pathology is outlined. The last brief chapter on the "Influence of Some Physiological Principles on the Future of Bone Surgery" is full of suggestion and indicates, as they do in other chapters, countless paths along which future fruitful research may travel. When these paths have been cleared, "an entirely new chapter of bone surgery will exist. . . ." "It is then that we can enter upon the treatment of diseases which for the time being we limit ourselves to observing, without being able to do anything to check them." Whether one agrees with all the authors' concepts and methods or not, the book should be read by every medical man who wishes to inform himself or to hold an opinion concerning this important and obscure body tissue. Almost every practitioner must at least occasionally deal with it in a therapeutic manner and he will find this short, clearly written and well illustrated book worth his careful perusal and digestion.

The Toxaemias of Pregnancy. H. J. STANDER. (The Johns Hopkins University and Hospital) Baltimore: The Williams & Wilkins Co. 1929. 161 pages. Price $3.00.

This essay which appeared in Medicine, February, 1929, is now printed as Volume XV of Medicine Monographs. "Medicine Monographs are comprehensive reviews that adequately discuss a disease, certain aspects of a disease or subjects that allow a better comprehension of disease processes".

In the present state of our knowledge of the subject, irreconcilable views are held, and while, in the absence of conclusive evidence, Dr. Stander naturally leans toward the view that some sort of nitrogenous metabolic imbalance is the fundamental defect in producing eclampsia, he exercises appropriate, and commendable restraint in this comprehensive review of the literature of the Toxaemias.

There is a defect in the bibliography which should be remedied. An example is found on Page 7 where a piece of work by Stander is noted. Turning to the bibliography one is confused by finding seven references to work by Stander with no apparent means of determining which one was in mind on page 7. To mention only a few other instances, there are six references to Titus, five to Ploss, five to Mussey, with no indication of identification. If the title of the article were given, it would often be of assistance in indicating which aspect of the subject has been considered therein. Or, the time honored but inartistic method of numbering references might be utilized until something else just as adequate is devised.

There is occasionally manifest a lack of finish in dealing with a topic. For example, on page 83, the anaphylactic theory is discussed briefly. One would expect to find some reference to the evidence against the theory also, as in Williams' Text Book. Perhaps the statement on page 94, that "J. T. Williams in 1921, directed our attention to the fact that uric acid is definitely raised, and quite early, in the course of the disease", contains a typographical or clerical error, as there is no confirmation by reference in the bibliography.

There is perhaps another clerical error on page 101: "Titus—holds that the fits are apparently the cause of the sudden drop in blood sugar", as the quotation from Titus on page 102 seems to contradict this view.

Under treatment, the author presents views as to the value of the squatting posture in eclampsia, but discusses with scant consideration, the possible beneficial effects of intravenous glucose solutions, generally regarded as considerable, whether they are specific, as Titus suggests, or entirely non-specific, in dealing with the cause.

But the book as a whole, presents an excellent review of a subject concerning which there is much information but little knowledge, and it is to be highly commended not only to the mere practitioner who has to treat cases of toxaemia, but also to the special worker in this field. The consideration of information brought together in this way, suggests many lines along which further investigation may be made, until the problem some day is brought to its solution.

Boston City Hospital Training School for Nurses. By MARY M. RIDDLE. 300 Pages. Price $3.00.

This interesting volume contains a short historical account of the early history of the Boston City Hospital and a complete history of the Training School for Nurses. The author, Miss Mary M. Riddle, R.N., a former President of the Alumnae Association, has gathered a wealth of material relating to the School and some of the influential doctors who were important factors in the development of the hospital. The detailed recital of the founding and growth of the training school is interspersed with much interesting material illustrative of the personal characteristics of the officers and nurses.

The important contributions to war service rendered by the graduates of this school are especially valuable and the chapter on "Great Events Affecting the Nursing Profession" will be enjoyed by doctors as well as nurses. Indeed the whole volume is replete with matter of general information although doctors and nurses who have been connected with the hospital will be more particularly interested.

The book is well constructed and illustrated and may be procured on application to Emily O. Boswall, 839 Boylston Street, or Miss Clara F. Managhan, Boston City Hospital.

Teeth and Jaws, by HERMAN A. OSGOOD, M.D., Boston, Mass. Second edition, revised, 135 pages with 61 text illustrations and 73 plates. Paul Hoeber, Inc. New York, 1929, 4to, cloth, $10.

This is the second and revised edition of the fifth volume of the *Annals of Roentgenology*, a series of monographic atlases edited by James T. Case, M.D.,

the first edition of which was reviewed in the Boston Medical and Surgical Journal, Vol. 194, page 378. The few discrepancies noted in the first edition have been corrected and three new chapters have been added. *The Roentgen Ray in Orthodontia*, Chapter IX, is one of these. It is important to diagnose the development and position of the permanent teeth before they have erupted, and the progress of absorption of the roots of deciduous ones when such difficult treatment is undertaken as often confronts the orthodontist. Roentgen pictures are also valuable as record to show the original condition as well as the progressive stages of improvement and the final result of orthodontic treatment.

Another new chapter (XIII) deals with the *Methods of Localization and Intra-oral Stereoscopy*. Further improvements in technique of making intra-oral stereoscopic pictures are described. Their use for locating foreign bodies or for investigating obscure dental problems is discussed. The author's statement that stereoscopy is still in its infancy is perfectly true. Its use in orthodontia, for example, should prove of great value.

The third chapter newly added to the monograph is Chapter VI. It takes up the subject which is still the topic of much discussion and controversy, namely; the *Roentgen Aspects of the Pulpless Tooth Problem*. The author favors conservation and treatment of pulpless teeth under certain conditions, and believes that the deciding factor lies in the patient's general health; it is a question of the immunity or resistance of the individual.

The collection of roentgen pictures which follows the text remains practically the same as in the first edition. There are 73 plates with 357 illustrations and diagnoses in atlas form as against 352 in the previous edition. All the roentgen pictures are beautifully reproduced and of a quality consistent with the high standard of the other volumes of *Annals of Roentgenology*.

Arthritis and Rheumatoid Conditions. Their Nature and Treatment. By Ralph Pemberton, M.S., M.D. Lea and Febiger, Philadelphia. 1929. Price $5.00.

In this book of 300-odd pages, we have set forth in clear writing the mature thoughts of an able internist who for fifteen years has been observing very intently the clinical and laboratory manifestations of arthritis and the rheumatoid syndrome. We know of no internist who has been as single-minded and persistent in his purpose to make helpful contributions to the treatment of these diseases as has the author. He has brought to the study a broad biochemical mind and a mind refreshingly free from prejudice. At real personal sacrifice and almost single-handed, he has maintained an excellent biochemical laboratory and has succeeded in creating an enthusiasm for investigation and in retaining the loyalty of his co-workers.

This book represents the result of sober thought, painstaking research and wide clinical observation. The breadth of his conception is evident in a paragraph in the preface. "The writer is of the firm opinion that no single or fixed viewpoint can encompass the rheumatoid problem which despite the fine achievements of the doctrine of focal infection, is not a disease of the specialist. . . It is believed that only wide angled vision can attain to anything more than sporadic results in any large group of cases."

The vast importance of arthritis as an economic problem is put forth; what is known of its histological and dynamic pathology is discussed; the symptomatology of the types is described. Almost half of the book concerns itself with those methods of treatment which the author's personal experience has proved valuable. He was one of the very earliest authors to point out the great importance of diet in arthritis and to prove later during the war by Army Base Hospital studies the favorable influence of the dietary measures he has advocated. He takes a hopeful point of view as to the prognosis. There must be a fertile soil before arthritis can develop and he is glimpsing biochemical and physiologic measures which will make such a fertile soil a barren one for the rheumatoid syndrome.

It is with the greatest satisfaction that we find a well trained and clear thinking medical man realizing that this hard problem of the chronic arthritic needs tackling. It is a problem for the internists who *do* treat and who *should* treat these patient sufferers. Economics as well as humanity demands that acute attention be focussed upon this large group of disabling diseases. This book of Pemberton's is the most hopeful and helpful sign we have encountered that the problem is being intelligently tackled.

Aids to Medicine. By James L. Livingstone, M.D. Lond., M.R.C.P. Lond. Junior Physician, King's College Hospital. pp 414, including index. Fourth Edition. New York: William Wood and Company. 1929. Price $1.75.

The little volume, which can easily be carried in one's pocket, is a condensed abstract of the material of larger textbooks on internal medicine. On the whole it is successful in including the broader essentials. There is, however, a certain lack of explicitness which causes it to fall short of one's highest expectations. Thus, Rheumatic Fever "must be distinguished from secondary arthritis. . . .", etc., without mention of the points of difference; and, in paragraphs on the treatment of various diseases, such generalities as: "The diet must be chiefly milk and beef tea," and "stimulants should be freely employed," stand without supporting explanations. The student who must study at odd moments and wherever he happens to be may undoubtedly obtain from it an outline of knowledge, but to serve any useful purpose this outline will need to be supplemented extensively from other sources.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume 66. New York. 1929. Pp. 623.

This series of reprints needs no introduction. In this volume the most interesting contributions for the general worker are those by Sabin on the bone marrow and by Swift and others on rheumatic fever. One cannot but be impressed by the vast range of experimentation hinted at by this series of reports.

Handbook of Microscopical Technique. Edited by C. E. McClung, Ph.D. Paul B. Hoeber, Inc. New York, 1929. Pp. 495. Price $8.00.

In this volume the detailed techniques involved in various types of cytological research are presented.

The first and shorter part of the book deals with general methods, whereas in the second part highly specialized methods for different types of work are presented. The methods given are far too detailed for general work in the ordinary laboratory but are of considerable value to the research worker.

Modern Methods of Treatment. By LOGAN CLENDENING, M.D. Associate Professor of Medicine, Lecturer on Therapeutics, Medical Department of the University of Kansas; Attending Physician, Kansas City General Hospital; Physician to St. Luke's Hospital, Kansas City, Missouri. C. V. Mosby Co. St. Louis. 1928. 2nd edition. Pp. 791. Price $10.00.

One can hardly imagine a more serviceable book to put in the hands of a young medical practitioner. This book summarizes in a very satisfactory way the modern medical treatment of all the ordinary diseases and gives the information which is very much needed by a young man just leaving a modern medical school or hospital where, probably by necessity, more emphasis is placed on diagnosis than on treatment, especially of functional disorders.

The book is unusually complete, yet sufficiently brief to make it very useful. The author obviously believes in drugs in their proper place but also gives ample space to dietetics, physiotherapy, psychotherapy, etc. We have nothing but commendation for the work, though occasionally we disagree on minor details.

Lipiodol in the Diagnosis of Thoracic Disease. By F. G. CHANDLER, M.A., M.D. (Cantab.), F.R.C.P. (Lond.), Physician with Charge of Out-Patients, Charing Cross Hospital; Physician, City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E. W. BURTON WOOD, M.A., M.D. (Cantab.), M.R.C.P. (Lond.), Physician with Charge of Out-Patients, City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E. Oxford University Press, 1928, pp. 129. Price $3.50.

This book gives a most excellent summary of the value of lipiodol in the diagnosis of thoracic disease. The authors make no undue claims for this procedure but feel that it is of distinct value. They summarize the indications for the use of lipiodol in diagnosis as follows:

1. Repeated haemoptysis, in the absence of tubercle bacilli or other definite evidence of tuberculosis.
2. The expectoration of pus:
   (a) As a pure diagnostic measure.
   (b) To distinguish between bronchiectasis and abscess.
3. In cases of bronchiectasis:
   (a) If operation is under consideration, in order to prove that the apparently sound side is free from disease.
   (b) To show the extent of the disease.
   (c) To determine the type of the disease.
4. When the whole of one side of the thorax is opaque to the x-rays, and fibrosis, thickened pleura, pressure on a bronchus, or new growth cannot be differentiated, to determine the state of the bronchi.
5. To determine whether a doubtful cavity is truly a cavity, if treatment depends on this knowledge.
6. To distinguish between a cavity, a localized pneumo-thorax, or a pleural ring, when such a differentiation is necessary.
7. In fistulae, to determine their extent and direction and to investigate the condition of the subjacent lung.
8. To determine the extent and direction of an empyema cavity.
9. To determine the extent of an encysted pleural effusion.
10. To determine the effectiveness of collapse operations.
11. To show the presence of lung tissue in an adhesion, though, as stated elsewhere, reliance should not be placed on a negative finding.
12. To differentiate subphrenic abscess or subphrenic pyopneumo-thorax.
13. Possibly in certain cases of chronic pericardial effusión.

These authors rather prefer to inject the lipiodol through the cryco-thyroid membrane but also use the oral route. In certain cases, they advise injection through the bronchoscope.

The book contains 47 unusually satisfactory reproduction of chest x-rays showing the value of the procedure.

BOOKS RECEIVED FOR REVIEW

Diseases of Children. First Edition Edited by Sir Archibald E. Garrod and The Late Frederick E. Batten and Hugh Thursfield. Second Edition Edited by Hugh Thursfield and Donald Paterson. Published by William Wood & Company. 1106 Pages. Price $13.00.

Report on Fourth International Congress of Military Medicine and Pharmacy, Warsaw, Poland, May-June, 1927, by William Seaman Bainbridge. Published by The Collegiate Press, George Banta Publishing Company. 248 Pages.

The Writing of Medical Papers by Maud H. Mellish-Wilson. Third Edition Revised. Published by W. B. Saunders Company. 184 Pages. Price $1.50.

The Surgical Clinics of North America, April, 1929. Volume 9, Number 2. Published by W. B. Saunders Company. 492 Pages.

The Toxemias of Pregnancy by H. J. Stander. Published by Williams & Wilkins Company. 161 Pages. Price $3.00.

Clinical Electrocardiograms by Fredrick A. Willius. Published by W. B. Saunders Company. 219 Pages. Price $8.00.

A Surgical Diagnosis by J. Lewi Donhauser. Published by D. Appleton and Company. 799 Pages.

Arthritis and Rheumatoid Conditions by Ralph Pemberton. Published by Lea & Febiger. 354 Pages. Price $5.00.

The New-Born Infant by Emerson L. Stone. Published by Lea & Febiger. 177 Pages. Price $2.00.

Aids to Medicine by James L. Livingstone. Fourth Edition. Published by William Wood and Company. 414 Pages. Price $1.75.

Précis de Physico-Chimie Biologique et Médicale by André Dognon. Published by Masson et Cie, Éditeurs. 310 Pages. Price 36 fr.

Old Age by Alfred Scott Warthin. Published by Paul B. Hoeber, Inc. 197 Pages. Price $3.00.

Studies from the Rockefeller Institute for Medical Research. Vol. LXVI and Vol. LXVII. Published by The Rockefeller Institute for Medical Research. Vol. LXVI has 633 Pages and Vol. LXVII has 672 Pages.

Notes on Chronic Otorrhoea by A. R. Friel. Published by William Wood and Company. 87 Pages. Price $2.25.

Physical Therapeutic Technic by Frank Butler Granger. Published by W. B. Saunders Company. 417 Pages. Price $6.50.

A Patient's Manual of Diabetes by Herbert W. Moxon. Published by William Wood and Company. 132 Pages. Price $2.25.

Die Chirurgie by Dr. M. Kirschner and Dr. O. Nordmann. Published by Urban and Schwarzenberg. Book 24.

Principles of Pathology by H. D'Arcy Power and William W. Hala. Published by D. Appleton and Company. 787 Pages.

Reflections and Operations by John O'Connor. Edited by Beatrice and May O'Connor. 361 Pages. Price 21/.

The Mobilization of Ankylosed Joints by Arthroplasty by W. Russell MacAusland and Andrew R. MacAusland. Published by Lea & Febiger. 252 Pages. Price $4.00.

A New Treatment of Cancer and Chronic Diseases by LaForest Potter. Published by Richard G. Badger, Publisher, The Gorham Press. 148 Pages. Price $2.00.

Diagnostic Methods and Interpretations in Internal Medicine by Samuel A. Lowenberg. Published by F. A. Davis Company. 1032 Pages. Price $10.00.

Studies from the Rockefeller Institute for Medical Research. Vol. LXVIII. Published by the Rockefeller Institute for Medical Research. 647 Pages.

The Diagnosis and Treatment of Disorders of Metabolism. Edited by James S. McLester. Published by Oxford University Press. 328 Pages.

The Diagnosis and Treatment of Diseases of the Stomach and Intestines. Edited by William F. Cheney. Published by Oxford University Press. 280 Pages.

The Diagnosis and Treatment of Diseases of the Heart. Edited by Henry A. Christian. Published by Oxford University Press. 355 Pages.

The Diagnosis and Treatment of the Thyroid. Edited by James H. Means. Published by Oxford University Press. 366 Pages. The above four volumes are sold only in a set of ten volumes at the price of $100.00.

Medical Information in Sickness and Health. Edited by Philip Skrainka. Published by Coward-McCann, Inc. 577 Pages.

The Injection Treatment of Hemorrhoids. Edited by Charles C. Miller. Published by Modern Surgery Publications. 124 Pages.

Injection Treatment of Internal Hemorrhoids. Edited by Marion C. Pruitt. Published by C. V. Mosby Company. 137 Pages. Price $3.00.

The Climacteric, by Gregorio Maranon. Edited by Carey Culbertson. Translated by K. S. Stevens. Published by C. V. Mosby Co. 425 Pages. Price $6.50.

Tuberculosis and How to Combat It. Edited by Francis M. Pottenger. Published by C. V. Mosby Company. 275 Pages. Price $2.00.

The Technic of Local Anesthesia. Edited by Arthur E. Hertzler. Fourth Edition. Published by C. V. Mosby Co. 284 Pages. Price $6.00.

The Normal and Pathological Physiology of Bone. Edited by R. Leriche and A. Policard. Authorized English Translation by Sherwood Moore and J. Albert Key. Published by C. V. Mosby Company. 236 Pages. Price $5.00.

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